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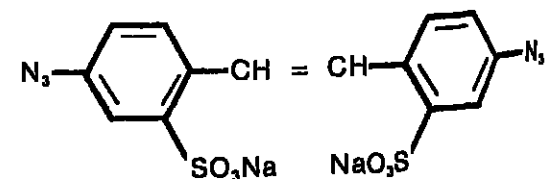
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CHEMICAL MARKETING
REPORTER's market index of
chemicals and related materials
(100=1974 average), based on
97 key commercial chemicals,
appears alongside with data for
two weeks ago, last month and
last year.

Chemical Prices Start on Page 3

CHEMICAL MARKETING QUOTE

CHLORINATED SOLVENTS: Firms state higher prices for them.
BETA-CAROTENE: The number of firms in the business multiplies.
LINEAR ALKYLATES: Detergent use is mature by 1988.
HELIOTROPINE: The pricing trend should rise.

Chemical Marketing Reporter

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NEWSPAPER

INSIDE CMR

NEW ON RESINS: Dow is optimistic about the outlook for polyethylenes and polystyrenes. Cost competition vis-a-vis glass, paper and rubber is well... Page 3

SUPERFUND: Rep. Florio says Administration infighting threatens the new superfund program. He sees OMB usurping powers rightfully belonging to EPA... Page 5

WASTE INDUSTRY: The market for hazardous waste management is expected to grow at an average annual rate of 13 percent for the next five years... Page 5

FRUCTOSE: This business seems poised for a growth spurt, as Staley announces expanded production at its Lafayette, Ind., corn syrup plant... Page 7

RECENT-CHINESE: A request by FTC for more data deepens merger, but it seems unlikely that a significant challenge to the proposal will emerge... Page 9

NEW PATENTS: Canadian drug prices will not be unduly increased as a result of amendments to the Drug Patent Act, consumer affairs minister says... Page 18

TELSOL BUYOUT: Management completes the buyout of the specialty chemicals firm from Farley Industries for a price that has not been disclosed, sources say... Page 46

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Soda Ash Prospects

3

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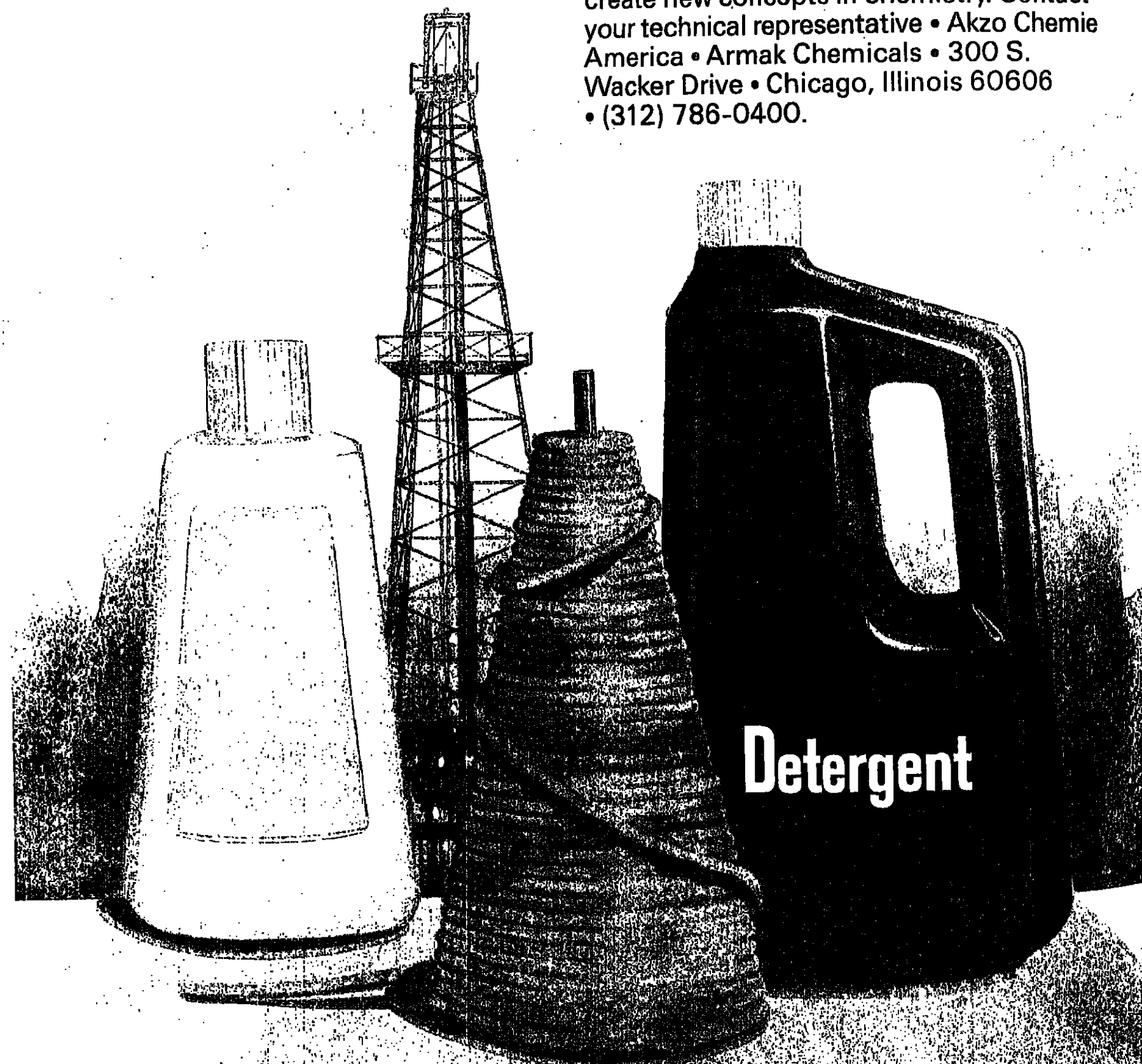
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Soda Ash Picture Is Bright

During 1978, soda ash producers made a record amount of product at operating rates unmatched since 1960. Next year is expected to be equally strong, and producers hope that profitability, long a sore spot for the business, will begin to follow suit.

Probably the most telling sign of the industry's strength this year is what Bill Breunig, FMC Corporation marketing director for soda ash, termed "a ten-point improvement in operating rates" as compared to 1985.

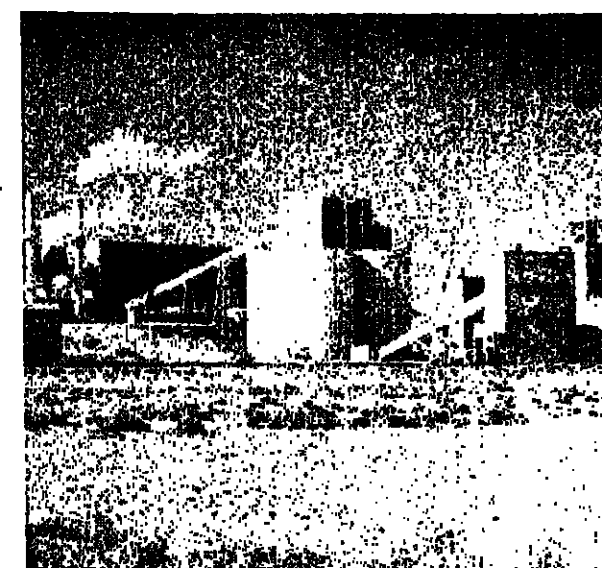
Higher operating rates are coming as a combination of an overall production increase for the year of about 1 percent, and the simultaneous effect of the closing of General Chemical's Syracuse facility in January of this year.

Based on nameplate capacities, 1986 operating

rates should average between 84 and 86 percent. Most producers feel, however, that the industry effective capacity is overstated by as much as 700,000 tons, so that effective or actual operating rates are probably in the low 90's.

Soda ash demand varies cyclically depending on activity in specific end use segments. Mr. Breunig points out that in May and June of this year demand was so strong that producer stocks were drawn down by over 100,000 tons. Producers are poised to enter 1987 with stocks lower by almost that much, as compared to at the beginning of this year. Soda ash capacity continued on Page 20

TEXASGULF SODA ASH: At Green River, Wyo. Current output for the industry is in the upper 80 percent to low 90 percent range of capacity depending on what nameplate figure is used.



Toxic Waste Site Rules Issued to Protect Workers

Citing known incidents of deaths from exposure to toxic chemicals, the Reagan Administration last week issued new health and safety regulations aimed at protecting up to 200,000 American workers at superfund and other hazardous waste sites.

The new regulations by Occupational Safety and Health Administration, which are effective immediately, were ordered by Congress last Fall when it reauthorized and reseeded the superfund program for cleaning up thousands of abandoned toxic waste dumps.

The President and Congress have acted decisively to respond, says OSHA director John Pendergrass. "Our action is part of a multi-agency effort to meet head-on the problems the nation faces because of decades of accumulating industrial and other wastes."

The rules require periodic medical exams of a minimum of 40 hours of safety and training for workers at both superfund and currently operating dumps handling hazardous wastes such as toxic chemicals and metals.

Some of the rules also apply to emergency response, police, ambulance and other workers who respond to spills and rail or highway accidents.

The interim final rule will remain in effect until October 18, 1988 when OSHA is required to issue a permanent standard. The agency estimates its standard will cover 25,255 superfund sites with 30,300 workers and about 10,000 active hazardous waste dumps with 10,000 workers.

As estimated 13,120 EPA-licensed hazardous waste haulers with 50,000 workers

are not covered by the interim rule since they come under regulations of the Transportation Department.

OSHA officials say they do not know the extent of the danger to site workers.

"The problem here is going into an unknown environment and assuring that workers are protected in it," says Thomas Seymour, an OSHA official who helped draft the regulations.

The regulations also require cleanup and dump operators to provide employees with proper protective clothing and equipment. In addition, they require extensive air monitoring of the sites for toxics, issuing detailed reports to employees on anticipated exposures that exist before they enter a potentially dangerous area and developing emergency response programs.

Frank A. White, deputy assistant secretary of OSHA, says the agency went beyond the minimum requirements mandated by Congress "in order to assure complete protection of hazardous waste workers." He says OSHA is targeting about 100 sites per year for inspections.

"We will attempt to focus on those sites where workers are present," says Mr. White. "If a complaint is filed by an employee, we would give that the highest priority."

While some members of Congress and labor unions have criticized OSHA during President Reagan's term for not adequately protecting workers' health and safety, Mr. White says, "OSHA has set its priorities and has limited resources. There are other concerned parties who have priorities of their own, but OSHA can move only so fast on so many issues at one time."

Biogen's Alpha Interferon Faces Patent Loss in Europe

The European Patent Office plans to revoke Biogen's patent for genetically-engineered alpha interferon, which is marketed in the US and Europe under the name "Intron A" by Biogen's licensee, Schering-Plough Corporation.

The patent office issued an oral decision on December 12, which is expected to be confirmed by a written opinion within three to four months, Biogen says it will "aggressively" appeal the final ruling.

According to Biogen, the patent office affirmed that "Intron A" is a patentable product, but objected to the scope of the patent which was issued in 1984. The patent was so broad that it covered not only the molecule itself but also any derivative molecule as to render the allowable patent virtually useless, Biogen complains.

Roche Inc., one of the firms that challenged Biogen's patent, says it objected to the Biogen patent because it covered the precursor molecule to alpha interferon, rather than just the mature molecule itself. Roche is currently seeking a European patent for its own version of alpha interferon, known as "Roferon A."

Biogen says the European Patent Office's

action does not affect Schering-Plough's ability to market "Intron A" in Europe and does not affect "Intron A's" patent position in the US.

Earlier this year, Food & Drug Administration approved commercial use of both "Intron A" and "Roferon A" for treatment of hairy cell leukemia (CMR, 6/9/86, pg. 5). With that action, alpha interferon became the first product of biotechnology to be approved in the US for the treatment of cancer.

US marketing approval followed an agreement by Roche and Schering-Plough not to file patent infringement suits against each other's alpha interferon products in the US or Europe. The agreement did not prevent Roche from challenging the patent itself for "Intron A."

Biogen says worldwide sales this year of "Intron A" are expected run somewhere between \$8 million and \$10 million.

Separately, Biogen said last week that it has agreed to license its gamma interferon cancer therapy to Baxter Travenol. Baxter will have exclusive rights except in the Far East and West Germany. The product is in phase three trials in the US for treatment of renal cell cancer.

Chemical Marketing Reporter

VOLUME 230
Number 25

DECEMBER 22, 1986

Dow Is Bullish On Plastic Outlook

Dow Chemicals USA is optimistic about the outlook for polyolefins and polystyrenics. Lee Shobe, general manager of Dow's Olefin & Styrene Plastics Department, reaffirmed the company's commitment to these markets at an informal update in New York last week.

Currently, he said, economic conditions, in particular improved cost position with respect to paper, glass and metal, bode well for the plastics in an atmosphere of increased consolidation, strong demand and high capacity utilization.

Growth should be sustained in older markets, while new products introduced this year are expected to find prominent niches, snatching some share from polypropylene, engineering thermoplastics, EVA copolymers and ABS resins.

Despite the "reverse shock" which hit the plastics industry when crude oil and derivative raw material prices plunged early this year, margins have improved, Mr. Shobe stated, and the plastics markets either been "on track," or have outperformed last year's projections.

Growth this year has been particularly dramatic in the polystyrene extrusion and molding markets, which grew by 10 percent, three times the growth rate seen from 1981 through 1985. Disposable packaging, particularly for fast-food and durable electronics end markets led the way, Mr. Shobe said.

The market for high density polyethylene, he adds, grew 6.8 percent this year, 70 percent of the 9.2 percent overall growth it saw from 1981 through 1985. New applications, particularly increased use of the plastic in oil bottles and chemical storage tanks, are said to have fueled this growth.

For the future, Dow expects at least 4 percent growth for polystyrene next year, with 4 to 6 percent growth for polyethylene. Capacity utilization should move up modestly through debottlenecking and incremental expansions.

Raw material cost and supply is "not the immediate issue," Mr. Shobe reiterated. Crude oil is expected to remain at its current price levels for some time to come. Feedstock processing versatility will be the deter-

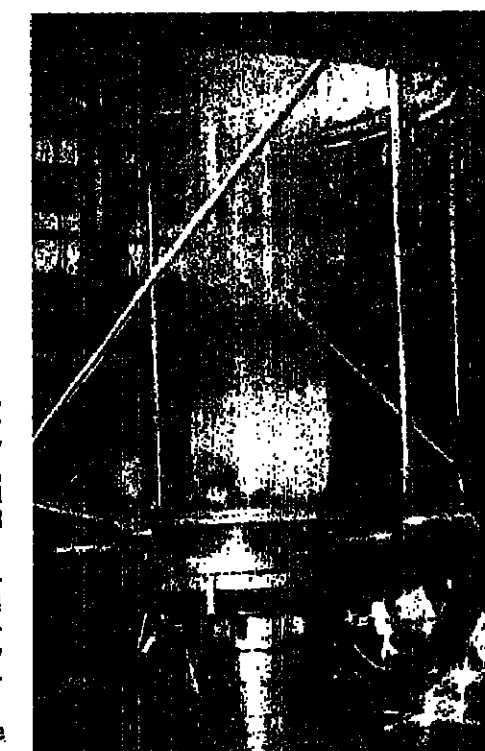
mining factor; ability to shift between heavy and light feedstocks will be the best cost protection.

Currently, capacity utilization for HDPE is said to be 99 percent of nameplate; rates for the more mature LDPE market are around 84 percent. Polystyrene capacity has been rationalized this year; even with less capacity, utilization stands at 93 percent of nameplate and 100 percent of effective total.

Given strong demand, expansions are probably inevitable, but, Mr. Shobe noted they will be implemented with caution. Debottlenecking and incremental increases will be initial steps.

"Ongoing restructuring and increased in-

Continued on Page 44



LDPE PRODUCTION: At a Dow Chemical facility the company says industry LDPE output is 84 percent of capacity.

Handwritten note: 380 141 Co 116

Laboratory Standards Urged By Union, Which Sees Safety Lack

The Federal government should take stronger action to protect laboratory workers from health hazards than the measures proposed by Occupational Safety & Health Administration, says the AFL-CIO. A standard proposed by OSHA covering laboratories in the chemical industry, hospitals and universities "is so weak and so vague that it will provide little protection to laboratory workers who are exposed to hazardous substances," says AFL-CIO safety specialist Margaret Seminario.

In similar comments to the agency, the International Chemical Workers Union and Public Citizen Health Research Group charged jointly that OSHA "seems far more concerned about saving laboratory employers some money than protecting laboratory employees from well-documented health hazards."

In a letter to OSHA officials, Ms. Seminario says the agency's proposed rule, which would pre-empt other Federal standards, would actually "diminish protections afforded these workers" currently.

The proposal would permit laboratories to develop plans for protecting workers based on their "unique" working conditions. OSHA's performance-oriented proposal notes that laboratory workers will be exposed to lesser amounts of a greater number of chemicals, but those workers and their supervisors are "usually highly trained and knowledgeable" about the hazards involved with the chemicals they use.

As a result, Ms. Seminario says OSHA's proposal would exclude "almost all specific protective requirements found in other standards."

"No level of performance is specified"
Continued on Page 45

Kellogg Joint Venture Has PRC Contracts

SinoKellogg Engineering Company, a joint venture of China Petro-Chemical International Company and M.W. Kellogg Company, has been awarded contracts valued at \$75 million for two plant projects.

The company will provide a 60,000-ton-a-year linear low-density polyethylene unit at Lanzhou for Lanzhou Chemical Industry Company, using gas-phase, fluid-bed PE technology developed by BP Chemicals Ltd.

The grassroots LLDPE plant, located within an existing petrochemical complex, will start up in 1990. Ethylene will come from an adjacent plant currently being modernized to use Kellogg's proprietary short-residence time furnace technology.

The SinoKellogg joint venture will also modernize a 1,000-metric-ton-a-day ammonia plant at the Dong Ting nitrogen fertilizer complex at Yueyang, Hunan. The project is scheduled for completion in 1989. The naphtha-based plant is one of 10 ammonia production facilities provided to the People's Republic of China by Kellogg during the 1970's.

The PE and ammonia projects are the first undertaken in China by Kellogg under the joint venture since it was formed in 1984 to provide engineering and construction services both inside and outside the PRC.

Fiber In Flight Of Voyager

The experimental Voyager aircraft, which is being flown around the world without stopping or refueling, is constructed largely of graphite fiber supplied by Hercules Incorporated and uses a new synthetic aviation fuel developed by Mobil Oil Corporation.

According to Hercules, 90 percent of the Voyager's structure is lightweight "Mammatite" graphite fiber. The fiber is embedded in an epoxy resin, producing a composite that is stronger than steel, lighter than aluminum and stiffer than titanium, Hercules says.

The Voyager had a total weight at take-off last week of 9,750 pounds, including 7,000 pounds of fuel.

Plans call for the Voyager to be in flight 300 hours or more without stopping or refueling. Such a flight would not be possible with conventional aviation oils, according to Mobil, because they require changing every 25 to 50 hours.

Methylene Chloride Replaced by Eastman

Eastman Chemical Products Inc. says its technical service and development laboratories have found two effective solvent blends as replacements for paint strippers containing methylene chloride.

One blend contains 5 percent "Ektapro" EEP solvent, 30 percent MAK and 20 percent n-butyl alcohol, while the other contains 40 percent "Ektapro" EEP solvent, 50 percent MAK and 10 percent "Ektasolve" EEP solvent. According to the company the compounds' laboratory evaluations confirmed that they are effective in stripping household-type paints such as alkyd enamels, latex paints, varnishes and shellac.

Blend No. 1 was found to have a flash point of 103°F and blend No. 2 had a flash point of 112°F. Both were reported to be as effective as paint strippers made with methylene chloride in tests on oil-based alkyd enamel paints. Aromatic hydrocarbons could be added to the blends to lower cost; however, Eastman's tests have shown that a decrease in effectiveness would result.

Blend No. 1 is more economical to use than blend No. 2 because n-butyl alcohol is used. However, it contains a lower level of ketone and glycol ether solvents in order to obtain a flash point above 100°F and is not as active as blend No. 2.

Fermenta's Founder Relinquishing Post

Refaat el-Sayed, founder and president of Sweden's Fermenta AB, will reportedly turn over a 43 percent interest in the firm to AB Industrivaerden, a holding company, to settle debts amounting to almost \$80 million. Mr. el-Sayed's remaining 53 percent stake in Fermenta is being held as collateral for other debts.

Montedison SpA earlier dropped plans to buy Mr. el-Sayed's interest in Fermenta after he sold key assets to other parties. AB Industrivaerden, meanwhile, reportedly plans to sell its stake in Fermenta at a later date.

Mr. el-Sayed and other Fermenta board members are expected to be replaced at a special shareholders meeting. Swedish authorities are investigating Fermenta board members for possible insider trading of Fermenta stock.

Monsanto Loses Benzene Lawsuit

Monsanto Company has been ordered by a Federal grand jury in Texas to pay \$108 million to the family of a former Monsanto plant worker who died of leukemia in 1980. Monsanto says it will appeal.

The company, found to be grossly negligent in failing to monitor benzene exposure levels at its Chocolate Bayou facility, argued unsuccessfully that there is no medical link between benzene exposure and the type of leukemia that afflicted the plant worker.

Monsanto further argued that it constantly monitored benzene exposure levels and that they were consistently "well below" the Federal exposure standard of 10 parts per million. The company said the plant was designed to limit exposure to 1 part per million.

Orphan Drug Grants

Food & Drug Administration has awarded 21 grants for the development of orphan drugs and other products during the 1987 fiscal year that began October 1. That is the largest number for any year since the orphan products program began in 1982. An orphan product is one intended to treat rare disorders and thus has little likelihood of commercial development.



R.W. Scher, who has been appointed senior vice-president, international, at Lubrizol Corporation. He was most recently senior vice-president for agricultural and chairman of Agrifin, a Lubrizol subsidiary.

Polypropylene Plant Slated in South Korea

Himont U.S.A., Incorporated, last week said that, together with Mitsui Petrochemical Industries, Ltd. (Japan), it has signed an agreement with Honam Petrochemical Corporation (South Korea) that will grant to Honam Petrochemical a license for Himont's "Spheripol" process for a new 80,000-metric-ton-per-year polypropylene plant to be constructed at Yeochon City.

The process was developed by Himont with technology generated under a cooperative research and development agreement with Mitsui. It involves loop reactors liquid monomer and fluid bed gas-phase polymerizations with high-yield high-steric-specificity (HY-HS) catalyst to produce resins and a range of impact copolymers.

Honam Petrochemical already operates an 80,000-metric-ton-per-year polypropylene plant at Yeochon City.

Analytical Laboratory Bought by Ohio Firm

Environmental Treatment and Technologies Corporation, Findlay, Ohio, says it has acquired Toxicon Laboratories, Inc. of Baton Rouge, La., making it the fifth in ETTC's network of environmental analytical facilities.

Toxicon Laboratories, Inc., founded by Michael Crouch, specializes in toxic and hazardous waste analyses. According to James L. Kirk, president and CEO of ETTC, the acquisition of Toxicon will allow ETTC to expand its analytical and data base management services in the Gulf Coast region of the country.

Terms of the acquisition were not disclosed.

ETTC, based in Findlay, is the nation's leading environmental services firm engaged primarily in the application of on-site treatment technologies to solve industry's environmental problems.

Dynamit Nobel Expanding Silanes

Dynamit Nobel Chemicals has begun a two-phase expansion of storage and production capacity for organofunctional silanes at its Theodore, Ala., plant.

The first stage of the expansion program is already under way with a 50 percent increase in bulk storage capacity scheduled to be in place in the first quarter of 1987. Construction has also started on the second stage, a 30 percent increase in production capacity, due for completion during the third quarter of the year.

Chemical Marketing Reporter

Volume 220 December 22, 1986
Founded October 18, 1971, by William O. Allen
Directed 1980-1986 by Henry J. Schnell
Schnell Publishing Company, Inc.
100 Church Street, New York, N.Y. 10007-2898
(212) 732-8820. Telex Number: 226113 CHEM UN
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NEW YORK (212/732-8820)—Armando B. Bockheim M. Carroll, Robert W. Winkler

CHICAGO (312/577-8880)—Charles H. O'Connell, James C. Oestmann, Arlington Publishers

Representatives, Inc., P.O. Box 1555, Arlington Heights, Ill. 60008

HOUSTON (713/580-8820)—Wilson S. Wray, Publication Services, Inc., 4201 Fm 1562

West, Suite 310, Houston, Tex. 77060

LOS ANGELES (213/450-8001)—Richard H. Walker, R.W. Walker Company, 2718 Over

Park Boulevard, Suite 1010, Santa Monica, Calif. 90405

SAN FRANCISCO (415/788-8858)—Richard H. Walker, R.W. Walker Company, 2718 Over

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EUROPE (331/4608-8858)—Robert Broekmans, American Publishers Representatives, Inc., No. 4 rue Robert de Flers, 75015 Paris, France

JAPAN (03/583-1181)—Hirosi Sato, JRM Inc., 1-1 Chorna, Higashi-Azabu, Minato-Ku, Tokyo, Japan

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CHEMICAL MARKETING REPORTER (ISSN 0009-2363) is published weekly by Schnell Publishing Company, Inc., 100 Church Street, New York, N.Y. 10007-2898. Second-class postage paid at New York, N.Y., and at additional mailing offices. Postmaster: send address changes in New York City to CHEMICAL MARKETING REPORTER, 100 Church Street, New York, N.Y. 10007-2898. Outside New York City to CHEMICAL MARKETING REPORTER, P.O. Box 990, Hightstown, N.J. 08520. Subscription price: \$100 per year in advance. Single copies: \$5.00. Payment in advance. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without prior permission in writing from Schnell Publishing Company, Inc., 100 Church Street, New York, N.Y. 10007-2898. Postmaster: send Form 3526 to Postmaster: Schnell Publishing Company, Inc., 100 Church Street, New York, N.Y. 10007-2898.

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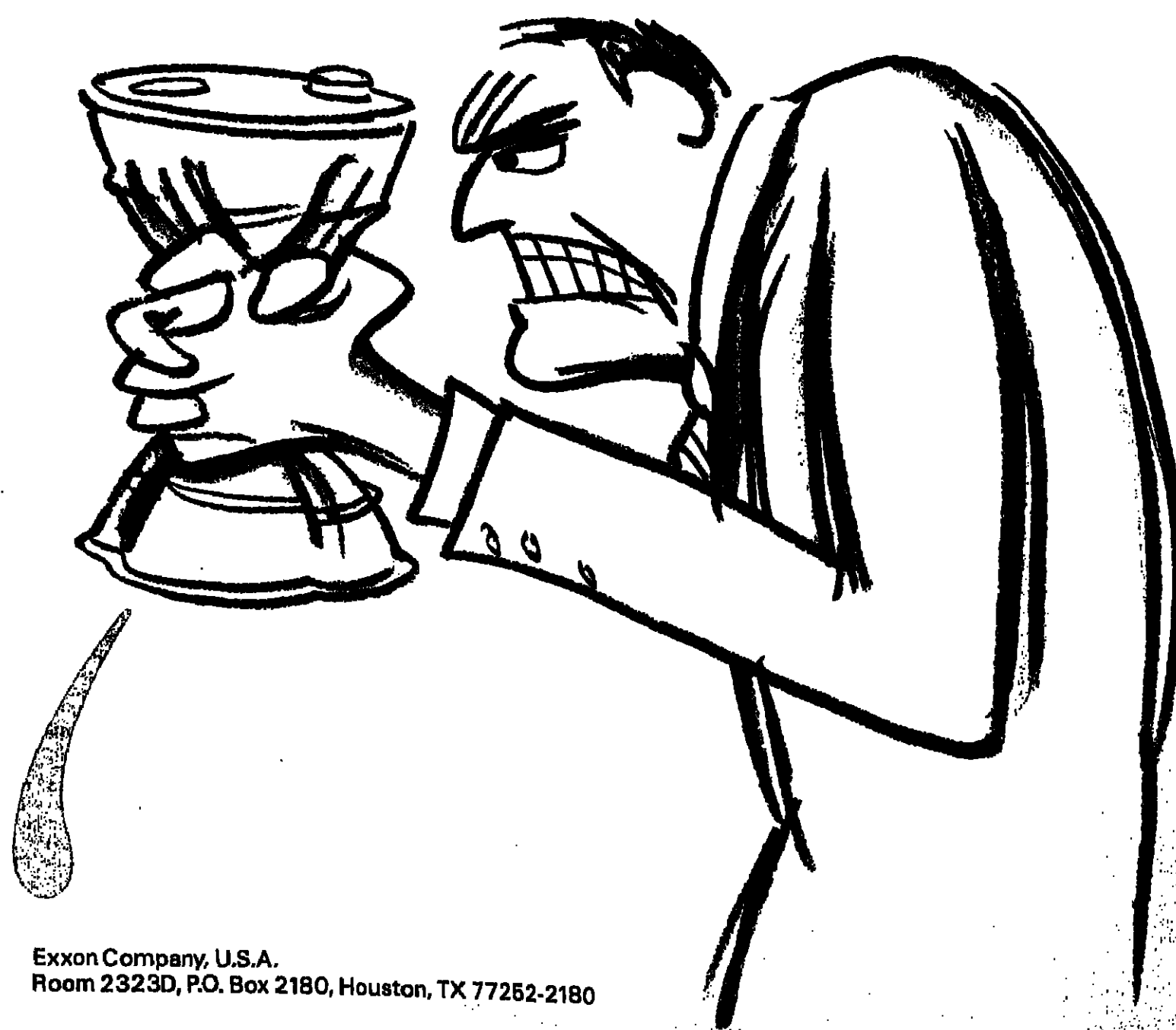
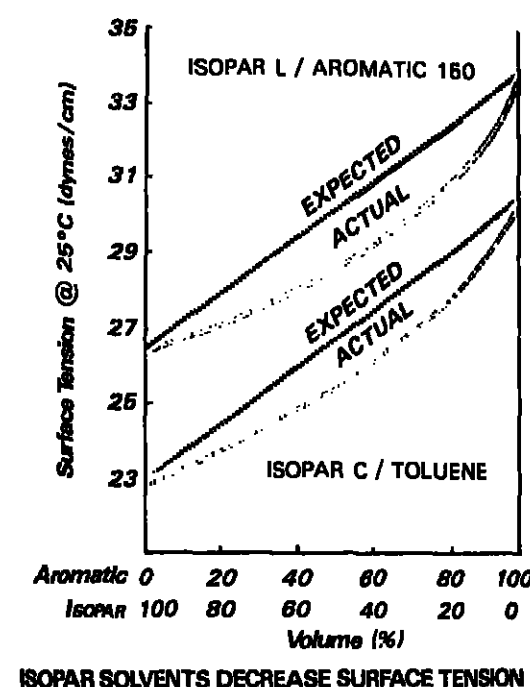
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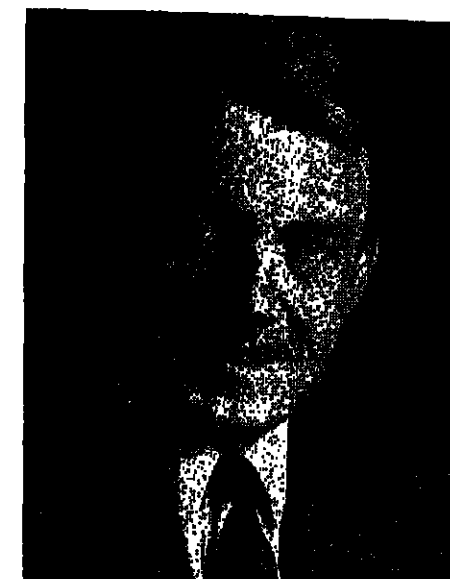
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G. Graze & Co. says it elected Jean-Louis Graze and Fred Lempereur as corporate vice-presidents. Both are key members of the company's Industrial Chemicals Group and share responsibility for the company's European specialty chemical business. Mr. Graze serves as president of the group's new Division, headquartered in Lausanne, Switzerland, and Mr. Lempereur is president of its Industrial Products Division, headquartered in Paris.



EPA Enforcement Moves Set Records During 1986 Year

Environmental Protection Agency says 1986 was a record year in the number of enforcement cases developed, referred to the Justice Department and filed.

At the same time, the agency announced results of an inspection and enforcement effort over the last year against certain hazardous waste storage and disposal facilities. "We have significantly increased our enforcement efforts to put the regulated community on notice that violations of the nation's environmental laws will not be tolerated," says EPA administrator Lee M. Thomas.

"EPA shares with the states environmental compliance and enforcement responsibility," notes Mr. Thomas. "The combined federal and state enforcement actions are at an all-time high. As a result of our efforts, the nation's environmental compliance and enforcement program is dynamic and healthy. By all measures the program is moving forward."

In fiscal year 1986, the agency referred 441 cases to the Justice Department, compared with 376 last year. Cases involving violations of the Federal Clean Air Act and water laws accounted for over 200 of these referrals, over 80 case referrals involved viola-

tions under Federal hazardous waste laws. The states referred 543 cases to state courts compared with 513 referrals last year.

The Department of Justice filed 245 cases in 1986 which were referred by EPA. The year before, Justice filed 241 cases.

EPA's 10 regional offices developed and referred to EPA headquarters or directly to the Justice Department a record 388 cases, up from 323 cases last year and 93 cases in 1981.

The agency also referred 45 criminal cases to the Justice Department this year, compared with 36 referrals last year. Criminal charges were filed against 94 defendants, which includes some from cases referred by other Federal agencies for violations of environmental laws. The year before, 40 such charges were filed and 123 in all previous years combined.

Sixty-seven defendants were convicted or entered guilty pleas this year, compared with 37 last year and 109 in all previous years combined.

Federal judges imposed fines totaling \$1.9 million against environmental criminals and prison sentences of 124 years, of which over 31 years will be served (the remaining years suspended).

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Monsanto Links Biotech With Agriculture's Survival

A Monsanto Company executive last week urged American farmers to use genetic engineering and other new technologies to increase their productivity and efficiency.

Addressing the Conference on Technology in Agriculture in Washington, D.C., Howard Schneidman, senior vice-president for research and development at Monsanto, said that costs of production must be controlled and high quality products must be developed. "American agriculture is to retain its domestic markets and expand its foreign sales."

"Our emphasis for several decades was in quality of production—yield—with much less thought given to efficiency of production," he said. "But the new trend is toward precision agriculture. More and more successful farmers will aggressively adopt new technologies to reduce the real costs of pro-

duction of the modern 'precision farmer' is an emphasis on crop quality.

To compete effectively with mass production in less developed countries, American farmers will want to differentiate their products through superior quality, he said. Mr. Schneidman said biotechnology will enable farmers to grow crops with higher protein content and better milling and baking qualities.

In the area of environmental impact, he noted that biotechnology will eventually yield crops that have been genetically engineered with natural defenses against pests and diseases.

New generations of microbial crop protection products and enhancers of production efficiency will provide the 'ultimate in environmental friendliness,' because they utilize natural protection, he said.

Mr. Schneidman called for innovative new partnerships between research universities, industry and government to ensure the rapid application of new science to agriculture.

The Conference on Technology and Agricultural Policy is sponsored by the Board of Agriculture of the National Research Council, the Kennedy School of Government at Harvard University, the National Center for Food and Agricultural Policy, and Resources for the Future.

Fructose Field Shifts As Staley Expands

Beginning in June of the coming year, domestic production of fructose will be stepped up to unprecedented levels. A.E. Staley Manufacturing Company has announced production plans for a line of crystalline fructose sweeteners called "Crystar" at its existing high fructose corn syrup plant in Lafayette, Ind.

Eventual production could rise to 100 million pounds per year. Production is scheduled to begin about June 1, 1987.

Questioned about production figures a Staley spokesman says: "We have developed a unique technology which gives us this production capability." The spokesman indicates plans to offer the product at about 35 to 60 cents per pound. Fructose currently sells between 75 and 90 cents per pound. Currently, US consumption of fructose is estimated at 10 to 20 million pounds per year.

In the past, the health food industry and also pharmaceutical companies have been the biggest consumers of fructose. But as the Staley spokesman explains, in addition to the traditional health food market, the company will also consider new markets for the product. As examples, he mentions baked goods and cereals. At this time, these markets use sucrose.

"To develop a larger market," says the spokesman for Staley, "means we need to be competitive in the general food industry." For the future, he sees partial replacement

industry by many customers because of its "all-natural" implications. As Melvin Wolk of sucrose with fructose in many different food systems."

Fructose is preferred in the health food industry. Continued on Page 17



Dr. Hans Kopper, who has been named managing director of BASF Fiber Intermediates at the company's headquarters in Ludwigshafen, West Germany. He is currently president of the Fibers Division of BASF Corporation and executive vice-president of BASF Corporation.

Ceramic Product Shipments To Triple in Next Ten Years

Shipments of advanced ceramic products in the US will approach \$2 billion in 1987 and by 1995 the market will exceed \$6 billion; according to a new research report from International Resource Development Inc., Norwalk, Conn. - based market research firm.

US vendors in several segments have been "taken to the mat" by Japanese competitors, the company says, but adds that it sees "some interesting niches" in which domestic vendors would likely survive and prosper.

On the whole, the outlook for advanced ceramics in the US is favorable, but growth will depend on how well managers respond to competition from the Japanese and their current work dominance of many advanced ceramics markets, says Jean Buffham, a member of the IRD research team that compiled the report.

Shipments of advanced ceramic products have grown from \$830 million in 1980 to nearly \$1.5 billion in 1985. Most of this growth was generated through increased demand for electronic products, most notably integrated circuits and ceramic capacitors.

Electronic components will continue to lead growth in shipments, but starting in the late 1980's mechanical applications, particularly heat engine components, will play a more significant role in market growth, IRD says.

The report finds that between 1990 and 1995, the value of domestic advanced ceramic shipments is expected to nearly double, led again by the demand for electronic components and even more rapid growth in heat engine ceramic applications.

In the field of electronic componentry, advanced ceramic materials are often out-performed and under-priced by their plastic counterparts, but it's felt an end to this plas-

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Formaldehyde Record Reopened By OSHA for Public Comment

Occupational Safety & Health Administration has reopened the record on the proposed revision of its formaldehyde standard to include new information and allow the opportunity for public comment on the new information.

The information concerns epidemiologic studies of persons exposed to formaldehyde, additional data on employee exposure to formaldehyde in the foundry industry, and other feasibility-related issues.

"We believe full consideration must be given to studies and data which became available after the formaldehyde record was closed last August but which are relevant to key issues raised during public hearings on the proposal," says assistant secretary of Labor for OSHA John A. Pendergrass.

"Public interest dictates that we not only consider this new information but that the public have an opportunity to comment on it."

He stresses, however, that the limited reopening of the record for 30 days will not

alter OSHA's September 1987 target date for issuing a final standard to limit worker exposure to formaldehyde.

Under its December 1985 proposal, OSHA is considering two regulatory alternatives: either a comprehensive standard if evidence points to formaldehyde as a human carcinogen; or a simple amendment to the current permissible exposure level (3 parts of formaldehyde per million parts of air averaged over eight hours) if the record indicates that the primary health concern is mucous membrane irritation and sensitization.

In either case, the proposal would lower the permissible exposure level to 1.0 or 1.5 ppm for the estimated 336,000 workers exposed above the 0.5 ppm level.

The new information includes:

- A reanalysis of a National Cancer Institute study on "Mortality Among Industrial Workers Exposed to Formaldehyde" by T.D. Sterling and J.J. Weinman.
- Two reports on formaldehyde and can-

Continued on Page 21

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News Capsule

Montedison to Acquire

Montedison SpA is expected to acquire Antibiotec of Spain at a cost of as much as \$200 million. The Spanish company, with annual sales of some \$145 million, produces pharmaceutical intermediates and is active in antibiotics research.

J.T. Baker Sale Fails

Ashland Oil Inc. said Friday (December 17) that negotiations with Richardson-Vicks Inc. concerning the purchase by Ashland of J.T. Baker Chemical Company have been terminated. Ashland said it had been advised that Richardson-Vicks decided to discontinue efforts to sell J.T. Baker.

Jordan Expansion

Jordan Chemical Company has completed additions to its specialty surfactants plant at Folcroft, Pa., as part of an ongoing expansion program. A new high-pressure reactor, dedicated to production of "Jordapen" CI (sodium cocyl isethionate) will increase production of that surfactant by 50 percent. A second reactor will raise capacity for the company's line of surfactants (alkanolamides, betaines and sulfates, quaternaries and amine oxides) by more than 10 million pounds, the company says.

EP Unit on Line

Exxon Chemical's affiliate in France, Sotab (Société du Caoutchouc Butyl SA), has completed a 30 percent expansion of its ethylene-propylene rubber plant at Vire-Dame-de-Gravenchon to 65,000 metric tons per year. Exxon has additional EP rubber capacity of 70,000 tons per year at Baton Rouge, La.

Europe's Insurance Woes

European chemical producers are considering establishment of a re-insurance group as a way of easing the insurance liability crisis over there. Details of the plan have not been disclosed but it is thought to involve a pooled system that could serve as a cover for insurance companies with chemical industry policies.

Westvaco Slates Plant

Westvaco Corporation, a producer of paper, packaging and chemical products, plans to construct a new resin size facility at its Charleston, S.C., oleochemicals plant. The new facility will allow the company to substantially increase the production capacity of its size products, according to Westvaco.

ICI to Sell Assets

Imperial Chemical Industries Plc. has agreed to sell its oil and gas assets to Enterprise Oil Plc. in return for a 25 percent stake in the UK firm. Under the agreement, ICI will receive 71.9 million newly issued Enterprise shares for its energy assets.

Du Pont 'Vespe' Plant

E.I. du Pont de Nemours & Co. plans to build a new plant to manufacture "Vespe" polyimide parts in Mechelen, Belgium, to meet growing demand for high-performance plastics. The plant is scheduled to open in April 1987. A similar plant in Choshi, Japan, opened in 1984. Du Pont expects European demand for "Vespe" parts to double by the early 1990's.

FMC Unit Acquires

FMC Corporation says its Spanish subsidiary, Foret SA, has purchased the natural sodium sulfate business of Barcelona-based Union Salfinera De Espana SA. The acquisition complements Foret's range of chemicals.

Phosphoric Probe Is Extended by US

The US International Trade Commission voted December 16 to allow the continuation of the investigation of dumping and subsidy charges filed by FMC and Monsanto regarding phosphoric acid produced in Belgium by Societe Chimique Prayon-Rupel SA and sold in the US by its exclusive chemical sales agent Nitron Chemicals Corporation of Greenwich, Conn. Prayon and Nitron's response was as follows:

"We're disappointed, but not surprised. This vote is only a first-step decision to proceed that in no way suggests the final outcome of a full study of the facts."

"We're encouraged that the chairman and vice-chairman of the commission voted against any further proceedings. We plan to cooperate with the commission and Department of Commerce, to defend ourselves successfully and to stay in the US as a responsible competitor."

"The companies say success in this market is due to an advanced process that is more competitive than the thermal process still used by US producers."

Kaiser Agrees To Arrangement With Alan Clore

Kaiser Aluminum & Chemical Corporation, Oakland, Calif., said that its board had unanimously approved a definitive agreement with Alan Clore, a British investor and Kaiser Aluminum's largest stockholder, that implements the plan to form a holding company that was announced three weeks ago.

The plan is subject to consents by lenders and approval of shareholders of Kaiser at a meeting to be held early next year, after receipt of proxy materials.

The plan includes the creation of a new holding company, an infusion of \$140-million of new equity by an entity controlled by Mr. Clore, certain protection for non-Clore group stockholders and a continuation of present Kaiser Aluminum management.

Mr. Clore and Guy de Chabaneix, senior vice-president of Mosely Securities Corporation, have been elected directors of Kaiser Aluminum & Chemical, and Mr. de Chabaneix has been elected to the board's executive committee.

SmithKline Aims At 10 Percent Rate of Growth

SmithKline Beckman Corporation, is aiming for annual growth of operating profits of 10 percent year or better over the rest of this decade, Henry Wendt, president and chief executive officer, told a meeting with analysts in Philadelphia last week.

The company is projecting this year's sales at \$3.7 billion, a level supported by a brisk rate of sales and earnings growth in the fourth quarter, Mr. Wendt said.

The SmithKline CEO noted that a portfolio of cardiovascular drugs being developed in conjunction with an agreement with Boehringer Mannheim Pharmaceutical Corporation should reach the market in Europe in 1988.

SmithKline Beckman will have the responsibility for development, registration and marketing of these compounds in the US and Canada.

George Ebright, SmithKline's chief operating officer, noted that "Contac," which has withdrawn from the market following a tampering incident in March, has more than recovered its market share and is again the largest selling cold and allergy product in the US, with growth at more than 10 percent yearly.

Diamond Shamrock Rejects Mesa Proposal

T. Boone Pickens Jr., general partner of Mesa Limited Partnership, said late last week that he was dropping his \$2 billion bid to acquire Diamond Shamrock.

"We made a fair offer, and the Diamond Shamrock board turned us down," Mr. Pickens said in a statement. "They have adopted the standard approach of entrenched management: hire investment bankers and lawyers, reject and sue."

In voting to reject the acquisition proposal by Mesa Limited Partnership, Diamond's directors cited doubts about the value of the partnership units that Mesa offered to exchange for Diamond Shamrock's common stock.

Mesa Limited Partnership is an oil exploration and production company formed by Mesa Petroleum Company, Amarillo, Tex., both of which are controlled by T. Boone Pickens, Jr., the oil industry raider who has previously attempted to acquire Cities Service Company and Unocal Corporation.

Diamond Shamrock's board said the offer was inadequate and that board members had specific concerns about the offer, "including the ability of Mesa to continue to make cash distributions to Mesa unit holders, the uncertain value of the units and the taxable transaction facing shareholders."

Mesa's proposal called for the exchange of one Mesa unit for each share of Diamond Shamrock common stock, 1.3 units for each share of Diamond Shamrock \$2.07 preferred stock and 2.75 units for each Diamond Shamrock \$4.00 preferred stock. It is one of the few merger proposals in which no cash at all is being offered.

In rejecting the proposal, Diamond Sham-

rock alleged that a recent Mesa filing with Securities & Exchange Commission shows that Mesa's cash flow from operations on an annualized basis was insufficient to fund its existing \$2.00 annual cash dividend.

Diamond Shamrock argued that the uncertainties about whether the dividend can be sustained directly affect the long-term value of the Mesa units since a decline in the dividend would result in a decline in the market price of the units.

Also, Diamond Shamrock claimed that the extremely complex Mesa proposal could take as many as two years to implement fully, which would make it even more difficult to project the consequences for Diamond Shamrock and its shareholders.

Another great drawback of the proposal, the company's directors stated, is that while it offered one cash to stockholders, many stockholders would face a tax liability to be paid out of their own funds. This, they added, would lead to selling of shares on the market to raise funds to pay the tax, with the result that the market price of the units would be subject to downward pressure.

Diamond Shamrock also told its shareholders that because of the way these partnerships function, unit holders have rights equivalent to those of stockholders in ordinary companies.

According to Diamond Shamrock, unit holders would have practically no voting rights. Also, the partnership does not hold annual meetings, and the unit holders do not elect a board of directors.

According to Diamond Shamrock's letter to shareholders, Mr. Pickens would receive approximately \$82 million if Mesa had acquired Diamond Shamrock.

Cyanuric Acid a Smog Cure?

Cyanuric acid, a pool chemical, shows promise in a process under development to virtually eliminate nitrogen oxide emissions from diesel engines and coal-burning power plants.

Heretofore, cyanuric acid has been known for its use as a stabilizer for chlorine in swimming pools, but the chemical is now viewed as a possible solution to such environmental ills as smog and acid rain.

The process, developed by scientists at Sandia National Laboratories in Livermore, Calif., uses cyanuric acid to convert nitrogen oxide into water, nitrogen and other gases, according to published re-

ports. Monsanto Company, which produces cyanuric acid, has been supplying the chemical to the Sandia scientists but has not been involved in any of the development work, according to a company spokesman in St. Louis, Mo.

Sandia operates the Livermore Combustion Research Facility, where the experiments are being conducted, for the Department of Energy.

The energy department owns the patent to any technologies developed at DOE-funded facilities.

The cyanuric acid process was disclosed in the journal *Nature* by Sandia scientists Robert A. Perry and Dennis L. Siebers.

Hoechst Merger Bid For Celanese Delayed

American Hoechst Corporation has received a request from Federal Trade Commission for additional materials in connection with its scheduled acquisition of Celanese Corporation.

The company has again extended the expiration date of the tender by its wholly-owned subsidiary Hostachem Acquisition Incorporated for Celanese shares.

American Hoechst, a subsidiary of Hoechst AG, headquartered in Somerville, N.J., said it had already supplied voluminous materials in response to a second request by FTC for information pursuant to the Hart-Scott-Rodino Antitrust Improvements Act.

The staff of FTC, however, determined that further information is needed from American Hoechst before the FTC will consider American Hoechst in substantial compliance with the request.

American Hoechst continues to supply such information, most of it from various foreign affiliates of American Hoechst. The procedure has been drawn out not only by the amount of information needed to cover Hoechst's vast operations outside the US, but

because much of it has to be translated from German and other languages into English.

As extended, the offer for all of Celanese's outstanding common stock, convertible preference stock and 7 percent second preferred stock will expire at 5 p.m. eastern standard time tomorrow, December 23, unless it has been further extended.

American Hoechst said that it has been advised by the depository that as of 5 p.m. EST on Monday, December 15, approximately 10,616,398 shares of common stock, 13,038 shares of convertible preference stock and 20,027 shares of 7 percent second preferred stock of Celanese had been validly tendered. The numbers assume conversion of all convertible debentures submitted for conversion.

These include 1,511,593 shares of common stock, 122 shares of convertible preference stock and 185 shares of 7 percent second preferred stock tendered pursuant to notices of guaranteed delivery.

By notice dated November 17, Celanese has called for redemption on December 18 all of its outstanding 4 percent convertible subordinated debentures due 1990.

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OILS, FATS & WAXES

Coconut Oil Prices Advance, But Buyers Keep to Sidelines

Consumption of coconut oil in the US is falling as consistently high price levels are keeping consumers away from the market. Instead, buyers are turning increasingly to less expensive competing oils, particularly soybean and palm.

The lack of interest in coconut oil has now gotten to the point where some buyers are beginning to sell off their forward positions in favor of the more cheaply priced oils, according to an industry source.

"I don't know how widespread the re-selling is at this point," says the source, "but it's clear that buyers are staying away from coconut oil." He says that there are some applications that people are still buying for, but he points to a lack of volume in new business in the market.

The price had been expected to ease off by this time, but some traders were instead surprised to see it hold at these levels. It had been thought that the approach of the holiday season in the Philippines would prompt originators to soften their prices in order to finish the year's selling before upcoming holiday time off.

Many market observers expected this to occur if buyers did not come back into the market. Instead, prices have remained strong, even in the face of low consumer interest.

The market experienced some strengthening early last week after a spate of trading in Europe. Most of the buying and selling was in the form of dealer-to-dealer paper trading, according to industry sources. "There was a great amount of trading, but enough to bring the price up," says a trader.

OTHER FIRING INFLUENCES

Also acting as a firming influence in the market in the last couple of weeks were reports that an origin dealer/product was having difficulty covering his sales.

Speculation on the extent of the difficulty was said to be exerting upward pressure on the price, although, according to one source, the problem has been resolved by the rescheduling of shipment dates.

The unwillingness of consumers to buy coconut oil is heightened by the plentiful supply. Stocks in the US as of November 1 were 15,000 metric tons, down slightly from the previous month's figure of 139,700 tons, according to Bureau of Census statistics.

Both of these supply figures are up significantly from those of the previous year. As of November 1, 1986 US coconut oil stocks were 15,000 tons, at the beginning of October stocks stood at 50,000 tons. The difference between the figures is attributed to increased

production in the Philippines this year.

Current coconut oil stocks in the US should be sufficient to carry through the first quarter of 1987, according to a trader.

In the meantime, very few new orders for coconut oil are being placed, sources say, and competing soybean and palm oils are priced as much as 5 cents per pound cheaper in the US than coconut oil, making it appear un-

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

Corn oil, Midwest, 1c, per pound
Lard, loose, bulk tanks, Chicago divd, 1/2c, per lb.
Tallow, inedible, bleach, tanks, divd, NY, 1/2c, per lb.

CHANGES/DOWN

Coconut oil, NY, 1/2c, per lb.
Cottonseed, 41% bulk, Memphis, \$5 per ton
Peanut oil, Southeast (restricted), 1/2c, per lb.
Soybean, 44% bulk, Decatur, \$10 per ton
Soybean oil, Decatur, 37c, per lb.

OILS, FATS INDEX

The Oils, Fats & Waxes Index reflects the prices of 11 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986 80.00
Dec. 12, 1986 79.50
Nov. 21, 1986 80.47
Dec. 20, 1985 80.68

Chemical Prices Start on Page 28

likely that consumer interest will be making a big comeback in the near future.

VEGETABLE OILS

LINSEED OIL — A seasonal slowdown has the linseed oil market looking forward to increased activity in the upcoming year. The price is currently holding steady at 25c. per pound in bulk, l.o.b. from Minnesota.

The market is very quiet because of the slackening production of oil-based paints. Some of the seasonal loss in business had been picked up by printing and hardboard users, but a source says that is grinding down as well. "A lot of plants close for the holiday," he says. "After the first of the year they start gearing up and increasing their inventories."

The new year is also expected to usher in a high crushing rate with the increased production of oil-based paints. Sources note that the delayed harvest earlier this year had no lasting effect. Most of the flaxseed is in processor or company hands and won't be marketed until after January first.

SAFFLOWERSEED OIL — The safflowerseed oil market is still recovering from the heavy rainfall which caused premature sprouting of at least 50 percent of the Montana crop.

As a result of early sprouting, there has been less yield with a poorer grade of oil produced. There have been some complaints about the dark shade of the oil, a typical result of the damage done to the seed. The problem is particularly difficult for paint and varnish producers who need a lighter color to blend with their formulas.

The price of the oil is expected to increase as the supply diminishes, leading some suppliers to hold onto their materials.

A source in North Dakota reports that 15 percent of the safflowerseed crop there was damaged from rains.

The current price of safflowerseed oil in non-breakable tanks in New York is 80c. per pound and 78c. to 80c. per pound for edible material in drums. New York delivered.

SOYBEAN OIL — Exorbitant crushing

FRIDAY SPOT PRICES

MARKET CLOSE DEC. 19, 1986

CRUDE VEGETABLE OILS

Coconut oil, NY lb. 20 1/2
Coconut oil, Pacific lb. NA
Corn oil, Midwest lb. 22 1/4
Cottonseed oil, Valley lb. 18
Lard, loose, bulk tanks, NY lb. 25
Peanut oil, Southeast (restricted) lb. 25 1/2
Soybean oil, Decatur lb. 14 1/2

REFD. VEGETABLE OILS

Coconut oil, l.w., NY lb. 28
Corn oil, bulk tanks lb. 30 1/2
Cottonseed oil, bulk tanks, NY lb. 27 1/2
Peanut oil, bulk tanks, NY lb. 31 1/2
Soybean oil, bulk tanks, NY lb. 19 1/2

OLMEALS

Cottonseed, 14% bulk, Memphis ton \$180
Lard, extracted, 34% bulk, Fargo ton \$110
Peanut, 60% bulk, SE, Alabama ton \$175
Soybean, unrefined, 44% bulk, Decatur ton \$147

FATS & GREASES

Beeswax, white, choice, tanks, divd, NY lb. 13
Lard, yellow, maximum 10% fat tanks lb. 11 1/4
Tallow, inedible, bleach, tanks, divd, NY lb. 14 1/2
Tallow, inedible, bleach, tanks, divd, NY lb. 14 1/2

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OILS, FATS & WAXES

rates have caused an excess of soybean oil, bringing a downward trend in the market. A comparison of the crushing rates in November 1985 (82.8 million bushels) to those of November 1986 (95.1 million bushels) shows an increase of 12.3 million bushels. Late last week the Chicago Board of Trade reported a price close to 14 1/2¢ per pound.

The extensive crushing is due largely to a high demand for meal, which is causing an abundance of oil to flood the market. "We had

low stocks in September and now we are producing far more than we need," says a source.

The lack of buying from India has contributed to the downswing. Since their crop is in season they have not been importing materials. Recently, however, they did buy some rapeseed from Canada and some palm oil from Southeast Asia, causing prices to rise.

Current export demand is largely met by cheaper oils coming out of Malaysia. "We have a residual supply of vegetable oils," notes an industry source, "we can't compete in the world market."

The future of the soy oil market is uncertain at this point. "If the Malaysian crop is small, as it has been rumored, the price could go up," says a source.

WAXES

MONTAN WAX — The price of crude montan wax imported from Germany is quoted between 56 1/2¢ and 62¢ per pound and is holding steady. The Californian variety is also steady at 61¢ per pound for bags shipped by carload or truckload FOB shipping point.

According to a source, the demand for Californian montan wax is up 5 percent and holding steady. "We are optimistic that the upward trend will continue; there are good sales in the carbon industry."

CHEMICAL MARKETING REPORTER

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AROMATIC ORGANICS

TDI Price Advance Holding As Market Demand Picks Up

Producers of toluene di-isocyanate say that healthy demand and reasonably low supplies give them confidence that the 8-cent-per-pound December 1 industry-wide price hike will stick.

"The price increase is firm, and the market remains tight," says one producer. There was no pre-buying activity, he asserts, because "material was not available."

Another producer observes, similarly, that "no pre-buying was allowed." Buyers were limited to taking 100 percent of their average monthly volume, he says and there has been "no resistance" to the price move.

A TDI purchaser in the foam industry concedes that "I think the increase will stick, just that we will pass it through." He attributes the likelihood of success to stronger demand than in the early months of the year when a similar price initiative failed.

Another foam industry source observes that the earlier price increase began to erode almost immediately, as major suppliers undercut each other's pricing. That has not been the case in the early weeks of this initiative, he notes.

Producers say that firm toluene costs, though not the major reason for their price increase, have provided some support. Rising toluene values were cited as contributing to the difficulty with raising prices earlier in the year.

COSTS REPORTED RISING

"More relevant matters," according to one producer, include "the cost to build and maintain a facility, environmental expenses associated with running a plant today, and the cost of energy necessary" to operate.

Producers say that, while domestic demand this year has only been about even with 1985, the second half of the year has been 3 to 4 percent higher than the first half.

The furniture and carpet underlay markets, which account for about 43 and 14 percent of TDI demand, respectively, are said to have been particularly strong since mid-year.

It is observed that this pickup in demand results from a high rate of housing finishes following heavy housing starts in the Spring. Brick business in the fourth quarter from the automotive industry is said to reflect year-end inventory adjustment patterns. The transportation market accounts for about 21 percent of consumption.

Producers say the industry has been operating at a fairly high rate for the year. Estimates range from 92 to 95 percent of effective capacity. "We've been running flat out, and inventory has probably gone down over the year," says one producer, noting that "some had any inventory" to sell off prior to the price move.

"Inventories are very low," agrees another producer, saying that "we are probably in for a fairly tight supply/demand situation" for the first six months of 1987 on account of downtime scheduled in the industry.

Olin Corporation says it will be down for six weeks in the Spring prior to its 30-million-pound-per-year debottlenecking at Lake Charles, La., which should be in place by June. At least two other producers are expected to take maintenance downtime during the first half of the year. Dow Chemical USA says it does not have a turnaround planned.

Olin says that the new capacity should be absorbed into the marketplace. A company spokesman points out that, with the downturn in the industry in recent years, capacity will still be lower than during 1984.

Industry supply will be greater in the second half of 1987, he says, but demand should pick up seasonally as it has this year.

Another producer comments that, while it is hard to predict the swings in the housing market, "I believe the continued drop in home mortgage rates will keep the housing market alive" into 1987. In addition, he says that "if you take into account all the refinanc-

ing going on in home mortgages, home furnishings and housing-related demand could be healthy next year."

TDI exports have been running at a strong clip this year, eclipsing last year's rate by 18 percent, and moving at fairly high prices, producers say. Major markets are Canada, Brazil, the Dominican Republic, Germany, and China.

It is noted that Brazil plans to increase its own production capabilities by mid-1988.

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

AROMATICS INDEX

The Aromatic Organics Index reflects the prices of 14 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986 167.84
Dec. 12, 1986 167.84
Nov. 21, 1986 167.84
Dec. 20, 1985 167.84

Chemical Prices Start on Page 28

through a debottlenecking project. This will cut US trade to Brazil in half, resulting in a loss of 14 million pounds per year of exports, says a producer.

ALKYLPHENOLS — Schenectady Chemicals, Inc. says it is raising market pricing on nonylphenol by 1 1/2¢ per pound, effective January 15. Present market prices are said to be in the upper-30¢-per-pound range.

At the same time, market pricing on butylphenol will increase by 2¢ per pound, and on octylphenol by 1 1/2¢ per pound.

The company attributes the changes to a scheduled industry-wide 3¢-per-pound phenol price hike January 1. "It appears the erosion in phenol has stopped, and that we are on an upward trend," says a company spokesman.

BISPHENOL-A — Aristech Chemicals Corporation and Dow Chemical USA say they are raising selling prices by 2¢ per pound, effective January 1. Dow attributes the price move primarily to higher phenol costs.

Dow says it is continuing to invest money in the bisphenol-A business. The company plans to introduce a granulated form to the market in the first quarter of 1987.

BTX — Major benzene producers, including Exxon Chemical Americas and Shell Chemical Company are raising contract pricing by 12¢ per gallon, to \$1.10 per gallon, effective January 1.

At that time, contract pricing for most producers will have increased 23¢ per gallon, since late November. Standard Oil Company has not yet announced a January 1 price.

The benzene spot market was quoted last week at \$1.07 per gallon, a 7¢-per-gallon rise from the previous week. "There is a perceived shortage of benzene," says one industry source, "that stems from production problems experienced by major producers and strong derivatives demand."

"Nobody anticipated this," dramatic surge in pricing this month, says another source, but "there is not a lot of benzene around, and people want it."

It is observed that, while hydrodealkylation capacity has started up recently to meet the industry's needs, "it is a function of weeks and months" before large quantities of that material become available to the market.

Spot thiophene pricing was quoted last week at 75¢ per gallon, a 5¢-per-gallon increase.

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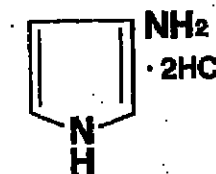
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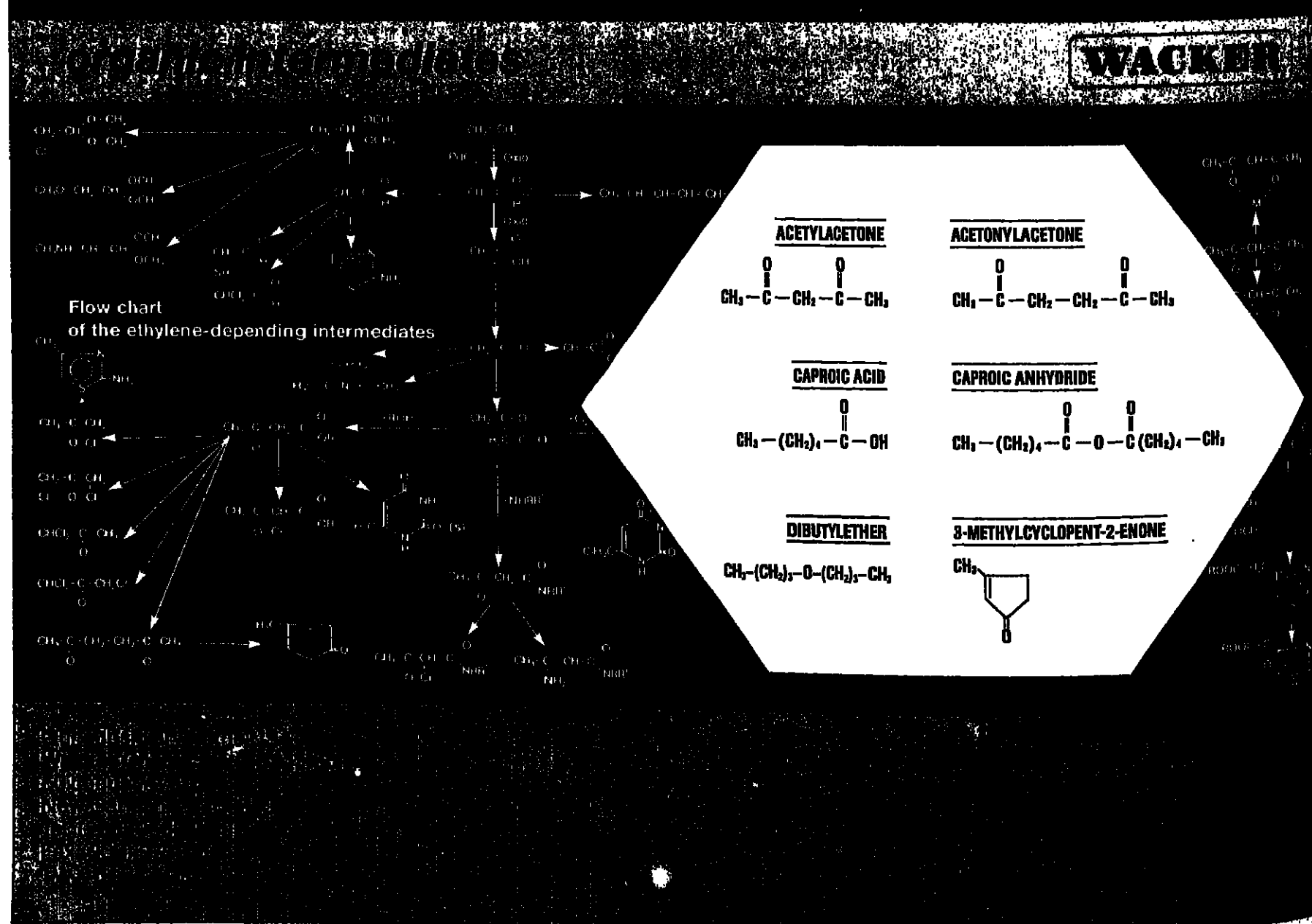
CHEMICAL MARKETING REPORTER

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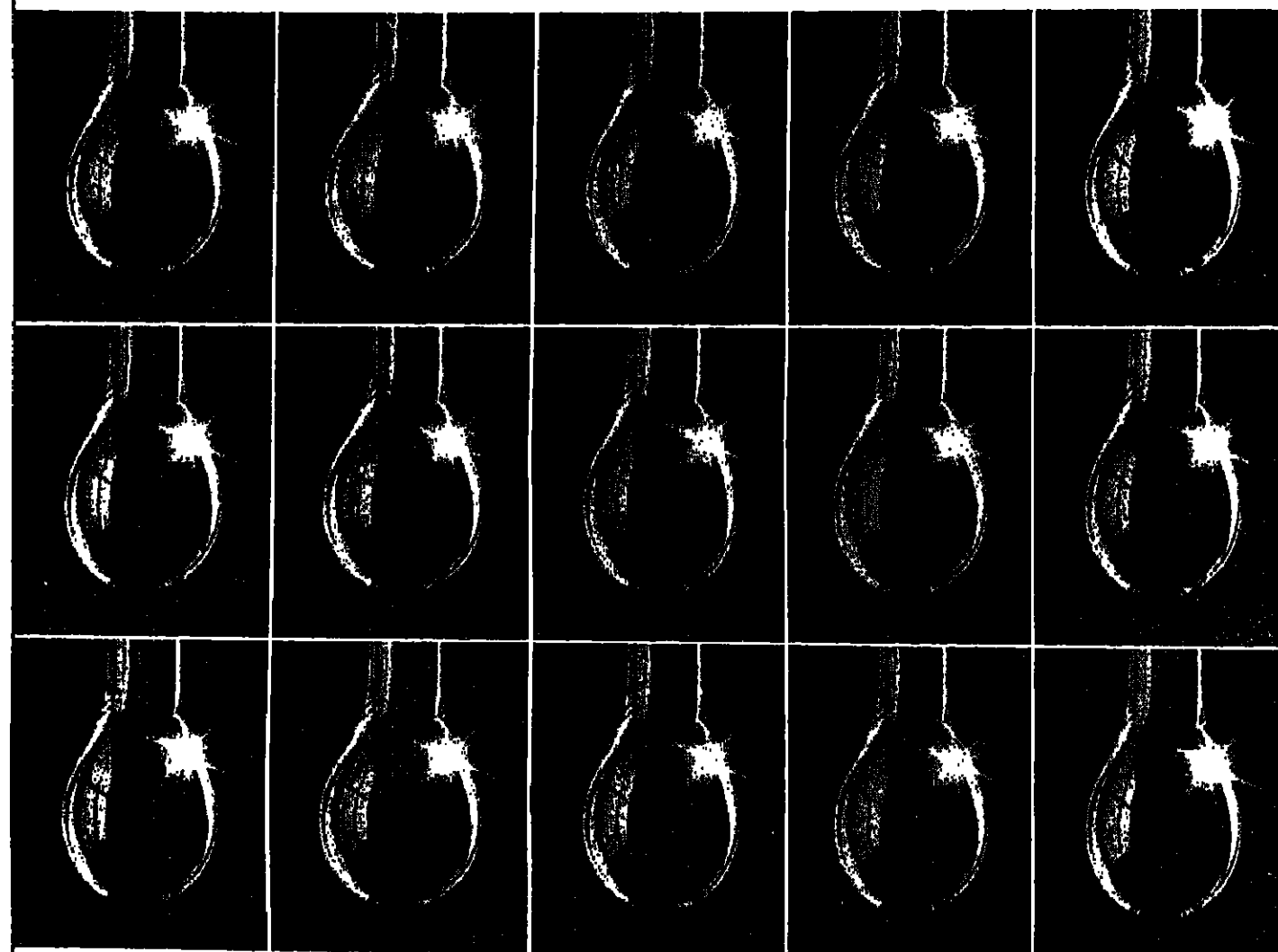
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CHEMICAL MARKETING REPORTER

December 22, 1986



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AROMATICS

from the week before, reportedly fueled the benzene movement.

Xylene was holding steady on the spot market between 78c. and 80c. per gallon. The contract level this month is said to be between 76½c. and 77c. per gallon.

NAPHTHALENE — A producer reports market price of 20c. per pound for condensed material. List pricing in the industry is said to be slightly higher.

The market is described as mature and stable with, "if anything, slightly decreasing usage." Major end markets include drugs, mothballs, and surfactants.

PHTHALIC ANHYDRIDE — Aristech Chemicals Corporation says that, effective January 1, it will remove all competitive allowances on prices less than 28c. per pound for molten material, f.o.b. shipping point.

The company also will eliminate all competitive allowances on prices less than 28c. per pound for flake material, f.o.b. shipping point.

Aristech's list pricing will remain unchanged at 30½c. per pound for molten material, f.o.b. shipping point, and 31c. per pound for flake, f.o.b. shipping point.

BASF Wyandotte Corporation says that, through contract renegotiations, it is eliminating off-schedule prices for the new year. BASF's list pricing will remain 27c. per pound on molten and 30c. per pound on flake, f.o.b. shipping point.

Another producer says that he has been making some upward adjustments in pricing of late, and one other producer says he will support any upward movement in pricing.

STYRENE — Producers are announcing higher prices for January 1. Arco Chemical Company says it is raising its pricing by 2c. per pound. The company's new list price is 30c. per pound.

Amoco Chemicals Company is increasing its list price to 30c. per pound less a 3c. per pound temporary voluntary allowance (TVA) from its previous price of 25c. per pound.

Borg-Warner Chemicals reportedly is moving its list price up to 32c. per pound less a 4c.-per-pound TVA from a level of 28c. per pound.

Chevron Chemical Company is raising its list price to 30c. per pound, with a 3c.-per-pound TVA for major accounts.

Dow Chemical USA is increasing its list price to 30c. per pound with a 4c.-per-pound TVA from a listing of 26c. per pound.

Fina Oil & Chemical Co. has a current listing of 30c.-per-pound, less a 4c.-per-pound TVA, and is evaluating the market for January.

Huntsman Chemical Corporation's December price has been 25c.-per-pound, less a 2c.-per-pound TVA.

Sterling Chemicals is increasing its list price to 30c. per pound from 28c. per pound. El Paso Products Co. is raising its list price to 28c. per pound.

Producers say the price changes are driven by surging benzene costs. A significant price increase is necessary "just to maintain margins," one producer comments, "especially since December has been fairly flat" for styrene selling prices which are quoted as low as 23c. per pound.

ALIPHATIC ORGANICS

Vinyl Chloride Prices Firm As PVC Tabs, Costs Rise

Vinyl chloride monomer prices are expected to firm in the new year in response to rising raw material costs and higher prices for polyvinyl chloride. An extremely tight supply-demand balance for VCM is also contributing to higher prices, sources say.

In recent months, the greatest VCM price movement has been vinyl resin's selling price. For example, a successful 1-cent-per-pound PVC price increase launched in November pulled the price of VCM up one cent per pound to a range of 16 to 16½ cents per pound.

Since November, a series of price moves have been taken by PVC producers to establish January resin prices at 1 cent per pound above November's prices. If these actions prove successful, VCM prices will advance a penny per pound in the new year, analysts say.

Pushing up VCM costs in 1987 is an expected \$10 per ton chlorine price increase, and a widely anticipated push in ethylene prices. Many analysts queried say ethylene producers will try to break out of the pricing cap that has plagued the primary olefin, and will push for 2 cents per pound price increases in January.

While it appears doubtful that ethylene prices will rally the full 2 cents, the prospect of increasing costs for both feedstocks has been enough for merchant ethylene dichloride producers to ask for one cent price increases next month. Prices for EDC, the direct precursor to vinyl chloride monomer, currently are quoted at "just under 10 cents per pound" by one seller.

But peaking at 17 cents per pound this year, vinyl chloride prices slipped to a 1986 low of 13 cents during the Summer and have edged slightly since then. Sources note that a recent firming trend in VCM prices has been entirely from PVC price hikes.

RAW MATERIAL INCREASES — Increases in raw material costs for VCM, notably chlorine, have not affected monomer prices. A tight supply-demand balance for VCM all year has also had little impact on prices. Together, though, the combination of rising raw material costs and (but availability) the monomer gives producers added impetus to hike prices, observers say.

On an annualized basis, demand for VCM has been extremely close to capacity in 1986. Laying a slight trail off in monomer output in the fourth quarter, one producer says 1986 production of VCM will reach 8.375 billion pounds. This compares to nameplate capacity of 8.4 billion pounds. This year's output shows a remarkable surge in VCM production in the past two years. Production in 1984 was registered a 7.7 percent gain over 1983, and an 11.4 percent increase over 1984.

Furthermore, many analysts are projecting solid demand for domestic VCM markets in 1987. Most observers say the building industry will remain strong next year, and estimate call for PVC demand to match or better last year's consumption total.

Meeting demand for PVC, VCM producers have adopted a plan of rerouting exports to the domestic market as needed, rather than closing or reopening idled VCM capacity. One observer says this strategy will result in net exports of 150 million pounds decline in net exports in 1987, from this year's 1.2 billion pounds total.

For now, domestic VCM capacity will remain close to the current 8.4 billion pound level. PPG, Dow and Shell maintain large VCM units on the Gulf Coast, but none of the companies plan to reopen capacity at this time. Occidental Chemical, the largest integrated PVC maker in the country, recently said that, while it frequently evaluates the need to build a VCM plant at this time, it produces ethylene, chlorine, ethylene dichloride and PVC, but not VCM.

As a result, VCM supply figures to be in

tight balance through next year, particularly early in the year, when demand for monomer is at its peak. One source summarized market conditions by saying PVC producers "like it when VCM is tight, because it gives more support to the PVC market. That's why Oxy hasn't gotten its own (supply) of VCM."

ANTIFREEZE — Citing increased costs for production, distribution, and marketing, First Brands Corporation has announced a price increase of 25c. per gallon on antifreeze.

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

ALIPHATICS INDEX

The Aliphatic Organics Index reflects the prices of 20 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986	222.80
Dec. 12, 1986	222.80
Nov. 21, 1986	222.80
Dec. 20, 1985	222.80

Chemical Prices Start on Page 28

products effective with shipments on February 1, 1987. Included in this increase are PRESTONE II, private label product and bulk antifreeze.

BUTADIENE — The December market price for butadiene has made a notable increase over the levels seen a month ago. Analysts are currently placing prices in a range of 11c. to 12c. per pound. The increase is generally attributed to the progressive tightening seen in supply of the olefin, contributed to largely by the lack of imports into the US.

European producers reduced their exports, seeing it as uneconomical to export at the low price levels seen recently in the US, which bottomed out at 9c. per pound during November (CMR, 12/1/86, pg. 19).

Instead, European producers are said to be co-cracking at a growing rate, currently at about 30,000 tons per month, according to an industry analyst.

Also contributing to the tightness in supply is the fact that US producers are relying more and more on propylene as a feedstock, which yields less butadiene than heavier feedstocks.

Current inventory levels stand at 137 million pounds as of the first of December, down from November's beginning stocks of 159 million pounds, according to Tucker Consulting Services of Dewey, Okla. "The inventories are probably at their lowest in two years," says one analyst, who goes on to say that this is creating a situation conducive to the increase in price seen in the market this month.

Although US steam crackers are running at high capacity, "We never make as much as we consume," says an analyst, who speculates that the strengthening in pricing here may begin to attract European exporters back to the US market.

POLYOLS — Olin Corporation has announced that it will increase its prices for "Poly-G" non-foam and rigid polyols by 3c. per pound. The price change is effective January 1, 1987 for non-contract customers and for contract customers, on the first date permitted by the contract. Price changes are not to exceed current published list prices; all other terms of sale, including payment, remain unchanged.

The price increase follows an Olin increase one week earlier on flexible polyols. Mobay Chemical Corporation and Dow Chemical also raised prices on both rigid and flexible polyols. The main reason for the increases is

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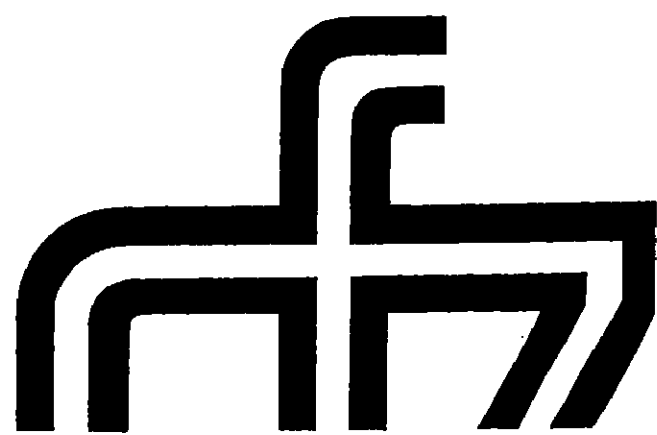
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ALIPHATICS

said to be the rising price of propylene oxide, the primary raw material in polyol production.

PROPYLENE GLYCOL — Olin Corporation has announced an increase in its off-list pricing for its propylene glycol products. The price increase is to be effective January 1, 1987 for spot customers and according to terms for contract customers.

The price increase will be 2c. per pound, not to exceed current list prices, for industrial, USP, feed, dipropylene and polychill grades. Prices for the propylene glycols are f.o.b. Brandenburg, Ky. Olin's current list pricing for bulk material is as follows: 41c. per pound for industrial grade; 43c. per pound for feed grade; 44c. per pound for USP grade; 44 1/2c. per pound for polychill; and 40 1/2c. per pound for dipropylene.

This price change comes on the heels of a similar announcement by Dow Chemical USA, which also raised prices by 2c. per pound for its propylene glycol products.


The strengthening seen in the market lately is said to be the result of producers trying to regain some of the position lost earlier to large quantities of imports that came into the US in 1984 and 1985. This year,

though, imports have dropped off, largely to changes in the value of the dollar and the D-mark, says an industry spokesman. "We're looking for a modest adjustment rather than total recovery of the price," he had been lost," says an industry spokesman. 1987 for spot customers and according to terms for contract customers.

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DRUGS & FINE CHEMICALS

Fructose Field

Continued from Page 7

president of Reach Associates, a market research firm, said recently on the occasion of the October 1986 sweetener symposium in Brussels, Belgium: "Fructose implies fruit and health. Fructose books have been written about the use of sucrose."

There is general agreement in the industry that fructose is a more healthful product, especially for individuals with blood sugar problems, such as diabetes or hypoglycemia.

It is metabolized along different pathways from those for sucrose, it does not create the metabolic sugar highs and lows associated with the metabolism of sucrose.

Fructose is a pure form fructose is a white crystalline substance, sweeter than sucrose. Under certain circumstances it functions as a preservative, for instance, in combination with ascorbic acid. This flavor-enhancing aspect may be appealing to the food industry.

Problems for the product may arise from the fact that fructose tends to pick up water and is exposed to the atmosphere. But, as one spokesman explains, the water-attracting quality may turn out to be a benefit in certain applications. In the case of baked goods, fructose's ability to hold water may prevent certain products from going stale.

Staley's only domestic competitor is American Xylofin. This company manufactures fructose from dextrose solution at its plant in Thomson, Ill. In the American Xylofin process sucrose solution is exposed to specific enzymes, and the resulting dextrose-fructose mixture is separated by means of chromatography. The remaining dextrose is recycled for further conversion into fructose.

XYROFIN JOINT VENTURE
Originally, American Xylofin was a joint venture of Finnish Sugar Company in Helsinki, Finland, and F. Hoffmann-La Roche in Switzerland. Hoffmann-La Roche & Co., N.J., has been in charge of US operations for the product. Beginning January 1, 1987, however, Finnsugar Biochemicals, located in Schaumburg, Ill., a part of F&L Sugar Company, will assume complete responsibility for the sales of Xylofin's fructose.

According to a Roche spokesman, the company will continue to supply its customers with fructose for the balance of 1986 and 1987, and is working closely with Finnsugar to ensure a smooth transition.

Finnsugar recently changed its name from Finnsugar Biochemicals, a firm specializing in sweeteners. George Harkins, head of specialty sweeteners at Finnsugar, stresses his company's determination to stay in the fructose market. "We will meet the competition, and we will stay in it," he says, adding, "we have been at this for a long time and we will stay in it."

There is general agreement in the industry that fructose is an interesting times for fructose. As one source puts it, "If indeed fructose prices should reach the levels Staley has been setting, it is felt that the food industry would be willing to look at fructose as an alternative to sucrose."

At the present, fructose application has been somewhat limited by specialized uses in pharmaceutical areas and in the health food industry. "If prices can be brought down," one source, "the common folk are willing to look at it."

Another source says, "fructose will command a premium over sucrose." At present, sucrose sells for 30 to 31 cents per pound. For 1986 the US consumption of sucrose is estimated at 14.8 billion pounds, a decline from a decade ago.

The fact that fructose is sweeter than sucrose in many applications comes into play, and the same sweetness can be achieved with less product, on a pound for pound basis. One source puts it: "the sugar industry is looking at it."

The source also points out that the chocolate industry, termed as "one of the last bastions of sucrose," might be willing to consider fructose. If indeed the prices come down to

the levels indicated by Staley. Over the last three years, foreign imports of fructose have been growing steadily, despite an import tariff of over 15 percent. Japan especially has made considerable gains. In 1984 it brought a little over 500,000 pounds into the US; by 1985 the figure had grown to almost 2 million pounds.

To date this year, Japanese imports of fructose have exceeded the 2-million-pound mark. Other major importers are West Germany, which cut its imports from over 2 million pounds in 1984 to slightly over 1 million in 1985.

PRICES TRENDLINES
WEEK ENDING DEC. 19, 1986

CHANGES/UP
None

CHANGES/DOWN
None

DRUGS INDEX

The Drugs & Fine Chemicals Index reflects the prices of 10 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986	211.16
Dec. 12, 1986	211.16
Nov. 21, 1986	211.16
Dec. 20, 1985	211.16

Chemical Prices Start on Page 28

tion in 1985 and 1986. France imported 142,000 pounds in 1984, the figure grew to more than 1 million in 1985 and in 1986.

As one producer notes, foreign importers may find the US market a more difficult place to do business than in the past.

BARIUM CHLORIDE — Producers of high-purity barium chloride see a steady market for the coming year. A spokesman for J.T. Baker Company agrees, saying that their prices have not changed for some time. The company charges \$1.50 per pound for a technical grade and \$5.50 per pound for the reagent-grade material.

A spokesman for G. Frederick Smith, makers of ACS purity grade, used for analytical applications, reports prices ranging from \$5.02 per kilo to \$6.60 per kilo. There have been no price changes for more than one year.

"The market has been steady over the past several years," says a spokesman for Chemical Products Corporation, Cartersville, Ga., the only US manufacturer of industrial-use barium chloride. "It is a mature market." Prices reportedly dropped several years ago, due to the impact of Chinese imports on the market. There is agreement among industry sources that the market has been depressed ever since.

Prices are as follows: For the crystalline product, \$23.50 per hundred pounds, delivered, in 50-pound bags; for the anhydrous variety, \$29.50 per hundred pounds, delivered, in 500 pound drums.

Some uses for barium chloride are as pigment and color in the textile industry, for blanc-fixe paper coating, and in the tanning industry.

NORFLOXACIN — Merck Sharp & Dohme announced the marketing of a new anti-bacterial agent, "Noroxin," (norfloxacin) indicated for the treatment of urinary tract infections.

Noroxin is said to belong to a new class of anti-bacterial agents called fluorquinolones with a broad spectrum of effectiveness and fewer side effects than commonly prescribed antibiotics. According to MSD, the product is the first agent available specifically for urinary tract infections.

Other drugs for the treatment of these diseases include trimethoprim/sulfamethoxazole, an antibiotic marketed by Roche as "Bactrim," and by Burroughs Wellcome Company as "Septra."

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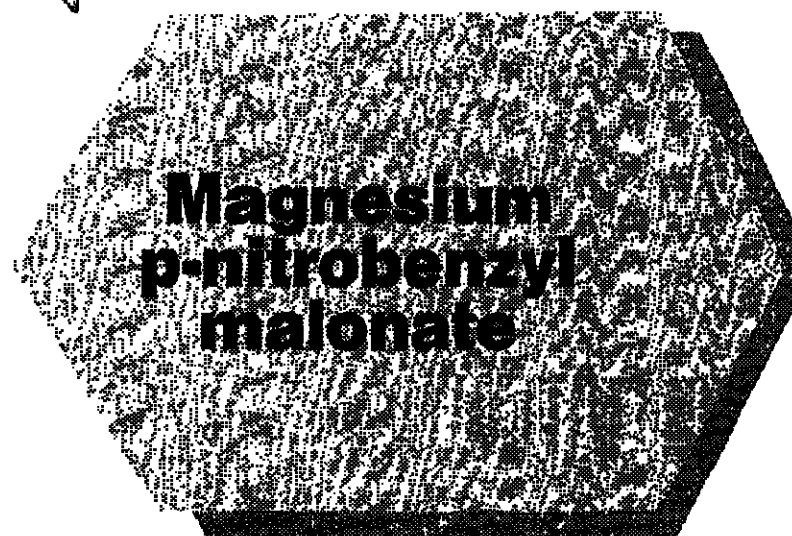
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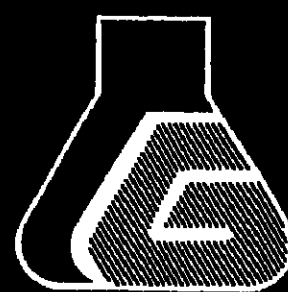


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Drug Patent Bill Is Defended By Canadians

Canadian drug prices will not rise as a result of amendments to the Drug Patent Act and critics are irresponsible when they suggest prices will climb because of proposals to give patent protection to pharmaceutical manufacturers, says a Canadian government official.

"Nothing we are doing will cause the rise in price of an existing drug or, for that matter, a future drug," Consumer Affairs Minister Harvie Andre told a hearing of the House of Commons in Ottawa last week.

But Mr. Andre acknowledged that the proposed amendments would delay the decline in drug prices that is caused by competition with generic copies of brand-name drugs.

"There is no question that generic competition causes the price to come down," he said, noting that the bill would delay the introduction of generic competition for seven to 10 years. "This can be called potentially delayed savings."

The legislation under consideration would guarantee a drug manufacturer exclusive patent rights for seven years against a generic manufacturer who develops a copy in Canada, and for 10 years against a generic drug whose chemical components are imported.

It would also provide the provinces \$100 million to compensate them for delays in introducing approximately 40 generic drugs to the market.

The bill would also set up a Drug Prices Review Board for the purpose of protecting consumers from unjustified price increases.

Mr. Andre declared that the legislation would produce an increase of \$1.4 billion in research and development in Canada, based on a 13 percent growth rate in the Canadian drug market, and would directly create some 3,000 new jobs by 1995.

He also contended that the proposal would end an unfair system of permitting generic copies. "We will no longer be taking a free ride at the expense of the rest of the world," Mr. Andre remarked.

"Whether you develop a new camera, a new mousetrap or a new drug, you're entitled to some period of exclusivity," he said.

Mr. Andre also pointed out that new drugs

often reduce health-care costs because they reduce hospitalization. The ulcer drug "Tagamet" had \$65 million a year in sales but saved \$135 million a year in hospitalization costs, he noted.

Mr. Andre told the committee the government had rejected a four-year patent term proposed by a commission inquiry, because "four years just isn't enough. It's not enough to clean up old toxic dumps under the name in worthwhile to take the risk to develop a new drug."

EPA May Ban Liquid Disposal

Environmental Protection Agency is proposing a general ban on the disposal of containerized hazardous liquids in hazardous-waste landfills.

The agency says such a ban would prevent the presence of free-flowing liquids in the landfills, thus reducing the risk of groundwater contamination from free-flowing liquids, which are likely to be released as metals, drums decay and collapse.

Drum collapse could also trigger eventual collapse of the landfill cover after the liquids have been closed. Some limited exemptions to the prohibition would apply, EPA says.

The agency is also proposing to prohibit the use of biodegradable materials used to absorb containerized liquids. In addition, EPA is proposing to require the use of liquids-release test to determine whether the waste/absorbent mixture will release liquid under pressures routinely encountered within landfills.

EPA banned the disposal of bulk liquids in hazardous-waste landfills in May 1986. The agency will accept comments on the proposal for 60 days following publication in the Federal Register next year.

Bioassay Lab Sale Fails to Go Through

Bioassay Systems Corporation says that US Biogenics, Inc. terminated the agreement to purchase for \$250,000 the assets of Bioassay's Woburn toxicology facility.

Bioassay is not negotiating with any other potential purchaser for the Woburn facility, which performs mostly government contracted toxicology work, primarily for the National Toxicology Program.

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Toxic Waste Spurring

Continued from Page 5

and acquisitions abound throughout the industry.

OSD/SVP reports that stricter enforcement of laws and regulations will force generators of wastes to turn to third parties for disposal, and this together with increased effort to clean up old toxic dumps under the Superfund law will push the market for solid, liquid chemical wastes from \$6.8 billion in 1986 to \$11.6 billion in 1992.

Trends that caused the private sector to increase its spending in this sector from \$1.1 billion in 1983 to \$6.9 billion in 1986 will continue for at least the next five years.

The total market for all types of air pollution abatement equipment increased from \$1.1 billion in 1983 to \$1.6 billion in 1986. The market is currently moving to enact much stronger air pollution control laws, particularly directed at public utilities, and this will help spur total sales to \$2.6 billion by 1992.

This segment is dominated by major suppliers General Electric, Combustion Engineering and McDermott claimed a 56 percent combined market share in 1986 and is based on only a few key industries (fully 32 percent of 1986 sales went to the petroleum and chemical product industries).

The market for water pollution abatement

is by far the slowest growing segment in the hazardous waste industry, due to low or negative rates of growth in the construction of new treatment facilities, the company says.

However, for the next five to ten years, the market will be driven by a scarcity of quality water sources, and this provides an opportunity for producers of water-treatment chemicals, who should see their market expand from \$2.1 billion in 1986 to \$2.7 billion in 1992.

Disposing of nuclear waste is a problem of growing magnitude, and a political issue with which no one is dealing effectively. Congress has recently put off addressing the problem until the mid-1990's.

While there is national pressure to enforce control of radioactive wastes, local communities are against the location of a waste storage site near them, or transportation of hazardous wastes across their areas to disposal sites.

Total costs for processing, packaging, transportation, and disposal amounted to \$312 million in 1986, and the market research firm predicts this figure will grow to \$490 million by 1992.

Despite the strong predictions of future growth, many companies that entered the hazardous waste management industry during the 1970's, anticipating considerable growth in product demand, have thus far been disappointed that legislative goals have not been met by regulatory measures.

Profitability problems which were endemic in the early days of the industry have for the most part been alleviated by better technology, better management, and industry concentration. However, disagreement still exists over how much, and how fast pollution should be abated, and this continues to cause regulatory indecision and inconsistency.

Chloralkali Unit

Continued from Page 5

mands as the reason behind the decision to increase production.

"Our ongoing commitment is to ensure that OxyChem will be able to meet the product needs of the customers we serve. This particular project is one way we will be able to demonstrate that commitment," comments Mr. Mears.

In addition to chlorine and caustic soda, the Taft plant produces sulfur monochloride, sodium chlorate and thionyl chloride.

Earlier this year, the corporation completed the installation of advanced technology membrane cells at the plant, an investment which it claims strengthened its position "as one of the lowest cost producers" of commodity chloralkali products in the United States.

The company also produces chlorine and caustic soda at eight other US plants, including its Convent, La., facility.

Occidental Chemical Corporation which manages the chemical operations of Occidental Petroleum Corporation, claims to be the largest chlor-alkali merchant marketer in North America. Before Occidental acquired Diamond Shamrock's facilities PPG was generally considered the largest chloralkali merchant marketer.

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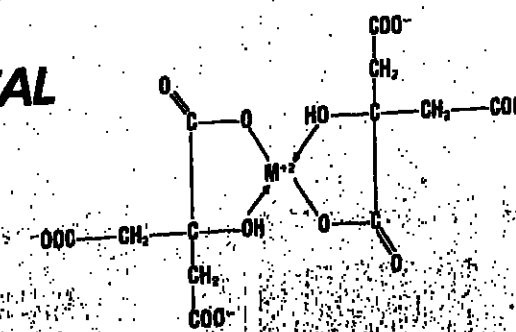
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Soda Ash Picture

Continued from Page 3

ity is scheduled to take another dip in early 1988 when Kerr-McGee completes the recently announced dismantling of its Westend soda ash facility.

Kerr-McGee says the shutdown will decrease the company's nameplate by 100,000 tons per year.

On the demand side of the equation, while producers have in recent years focused attention on strong export demand, 1988 domestic demand was a highlight as well.

According to Ignatious Gallow, a market researcher with Texasgulf Chemicals Company, 1988 US consumption of soda ash should reach 6.7 million tons, up about 1.5 percent from the previous year.

Producers note that the glass container business, which accounts for over 25 percent of soda ash consumption, has been surprisingly strong this year. While overall container glass production is said to be up somewhat, consumption of soda ash in this business is tempered by the fact that cullet glass is also consumed in container production.

Mr. Gallow calculates that soda ash consumption in container glass is off 1 percent through August, as compared to the same period last year. He adds, however, that this compares to consumption declines ranging from 3 to 6 percent in previous years.

CONTAINER GLASS STRENGTH

Soda ash makers say container glass is riding on the strength of the beer and wine as well as the specialty foods industries. Chesebrough-Pond's, for instance, this year introduced a glass-jarred product called "Ragu Pasta Meals" which is said to have met with considerable success. Other companies such as Campbell Soup Company and American Home Products have developed their own versions of the pasta dish.

In a similar vein, one producer notes that, in conjunction with the Glass Producer's Institute, Libby is promoting a line of single serving juices that come in glass containers.

Flat glass production for the auto and construction industries has also contributed to the banner year. Some fear, however, that high commercial vacancy rates and the new tax law may lead to a drop in construction in 1987.

Producer estimates of overall 1987 US soda ash demand are flat to down slightly. Overall demand should fare better, however, since the export market is expected by most to grow above 1986's record levels.

Export growth should be aided by the partnership General Chemical entered into with the Australian firm ACI International. Through the partnership, ACI purchased a 40 percent interest in General's Green River operations. Mike Stark, vice-president and general manager of soda ash for General says that ACI will take a portion of Green River soda ash, but that it will be solely for ACI's internal consumption and will not adversely affect the world price or the activities of ANSAC, the US soda ash export association.

In addition to this export development, producers report that a synthetic soda ash facility in Switzerland is scheduled to close in the near future. While this particular shut down is not significant in itself, many producers feel it is indicative of a general trend in the European synthetic soda ash industry to reevaluate the economics of old facilities.

Another often-cited export issue is the question of Japan's receptivity to US soda ash. Mr. Stark notes that several events occurred this year that may contribute to Japan's becoming a larger buyer of Green River product.

The first such event, he says, was passage of US Senate Resolution 504 which requested a Presidential appeal against unfair Japanese soda ash trade practices. In addition, says Mr. Stark, the Japanese Fair Trade Commission has found Japanese producers in violation of fair trade practices, but has taken no punitive action. Ambassador Mike

Manfield is urging further Japanese action. Even without Japanese action, US soda ash exports are expected to total 2.1 million tons this year, an 8 percent increase over 1986. Most, although not all, producers expect the figure to increase in 1987, but by a smaller margin, maybe 100,000 tons. The extent to which the General Chemical venture will

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

HEAVY & AG INDEX

The Heavy & Ag Chemicals index reflects the prices of 18 representative materials in this sector and the quantity of each produced in 1986.

Dec. 19, 1986	113.00
Dec. 12, 1986	112.00
Nov. 21, 1986	112.00
Dec. 20, 1985	113.00

Chemical Prices Start on Page 24

fect export volume is a questionmark in the minds of producers.

An area that most marketers have not factored into 1987 projections, but which they are watching, is the replaceability of soda ash with caustic soda in many applications. Observers note that if caustic soda prices continue the firming trend which began in October of this year, some Na₂O consumers may switch to soda ash. While all are hesitant to speculate about actual replacement volumes, one producer says there is at least a potential for 200,000 to 300,000 tons of product substitution.

FERTILIZER MATERIALS

UREA — A decision by the Commerce Department regarding the imposition of duties on imported urea will be announced before December 23, but some producers say the US market will remain muddled regardless of duties.

The supply of imported urea, for example, has doubled (through October of 1986) to 1.1 million short tons, but at widely differing prices. At the same time, demand for urea is difficult to project due to USDA land-bidding programs in which farmers may or may not participate. As a result, US urea producers find themselves hesitant to run their plants at any but sub-par capacities.

Sources report import prices (at Gulf Coast docks) to range from \$61 per ton for Russian, East German, and Romanian urea; \$67 for Italian; and \$78 for Venezuelan. Domestic urea has recently been selling for \$74 to \$78 per ton, and one observer suggests that US prices will have to reach the \$84-to-\$88 range to forestall slowdowns and outright shutdowns.

The reason import duties may not restore prices to the \$100-to-\$110-per-ton range of early 1986 is the unprecedented oversupply and overcapacity throughout the world. (The US is not alone in considering anti-dumping legislation.) One source feels that the best of duties would be primarily psychological, of duties would be that the East Block, while another points out that they are not suppliers would respond to them by raising prices still further, enjoying, as they do, the cushion of state subsidies. Thus, unless the absence of demand may not be enough to buoy the producers.

INDUSTRIAL ACIDS

SULFURIC ACID — E.I. du Pont Nemours & Co. has announced it will increase its off-list price for sulfuric acid

HEAVY CHEMICALS

at three locations, effective January 1987, under contract permit.

Prices for sulfuric acid will increase by 100 percent basis, for material shipped from Grasse, N.J., New Haven, Conn., and Hammond, Ind. New prices are expected current schedule. Du Pont produced only at Grasse, but operates at the other locations.

Prices for sulfuric acid are falling in line with the price of other Northeastern and Midwestern acids. Stauf's in Hammond, Ind.; Essex Industrial's in Chicago, Ill.; and General Chemical's for all acids and its terminal in Fort Madison, Iowa.

Industry observers feel that the Midwest's acid market will need the support of similarly priced sulfuric acid for Canadian and other smelter-derived product. Acetylene, Southwest metal smelters are seeing some improvement in their present operations, but will not "modest results."

Phosphoric acid shipped out of Du Pont's terminal, and General Chemical's Fort Madison, terminals is smelter-derived. This material is recovered product in the Midwest may firm, provided Canada's price follows suit.

Meanwhile, Southeast prices for virgin sulfuric acid will not strengthen, according to one observer, "for at least a Dec. 12, 1986." In his opinion, the price of elemental sulfur will have to strengthen to acidify sulfur.

It does not seem likely in the near future domestic sulfur demand for the first 10 months of 1987, according to Bureau of Mines. Demand has fallen 13 percent below that of 1986 demand for fertilizer (representing 60 percent of sulfur's domestic usage) is expected to slump in 1987.

Rabies Vaccine Wins Approval; Cost Cut Seen

Food & Drug Administration last week approved the licensing of a new low-dose rabies vaccine to protect veterinarians and others likely to be exposed to animals carrying the deadly disease.

The new vaccine dosage form is manufactured by Merieux of Lyon, France, and was first originally licensed to manufacture the higher dose human cell culture vaccine in 1980. It will be distributed by Merieux Institute Inc. of Miami. The new vaccine will be much less expensive than the currently used 10-dose vaccine. Consequently, FDA says it may gain wider use by people visiting or traveling abroad to rabies endemic areas, such as parts of Africa, India and Latin America.

The vaccine shot is injected in three doses, the currently used vaccine, over three to five weeks. Booster shots are given about every two years.

Vaccine-protected people who are subsequently bitten by a rabid animal then would require two injections of the larger, intramuscular dose, FDA said. If they had not had previous vaccination, they would require three of these high-dose intramuscular injections, FDA said.

Thousands of people receive rabies vaccine each year — generally after, not before, being bitten or otherwise exposed to rabid animals, according to the FDA. Rabies in wild animals, including raccoons, skunks and bats, has been an increasing problem in parts of the US in the past few years, especially in raccoons in the eastern US, FDA says.

Cases of human rabies have been reported in the US since 1980, the last in 1985. This case occurred in a 19-year-old woman who had arrived in the US about two weeks before he became ill. He died

May 20, 1985, in an Abilene, Texas, hospital. The source of his exposure was never discovered.

The symptoms of rabies range from persistent nausea to violent muscle spasms. Once these symptoms are evident, rabies is almost always fatal.

US studies demonstrated adequate immunity in 100 percent of recipients of the new low-dose vaccine, according to FDA. The studies were carried out by scientists of the national Center for Disease Control, which has its headquarters in Atlanta, and several at veterinary schools.

Ceramic Products

Continued from Page 7

tic dominance is in sight because of the more sophisticated tasks that are being required of IC's as well as strides that have made their manufacture more economical.

Many of the big automobile manufacturers are reported investing large sums in advanced ceramic R&D in hopes that a cheaper-to-build, easier-to-maintain engine will be forthcoming.

By some estimates, ceramics can improve efficiency from 30 percent to 50 percent over today's conventional engines allowing for higher operating temperatures and reduced weight, friction and inertia.

The obvious and unfortunate drawback at this time IRD says, is what is referred to as catastrophic failure — advanced ceramics don't break down, they blow up. This means that instead of a valve job a car owner would need whole new engine.

Besides the much-publicized Japanese dominance in semiconductors, there are signs that they are way ahead in the area of automobile heat engines also, IRD says. Nissan was the first manufacturer to announce a car including a ceramic part.

Already a good percentage of ceramic IC's are used by the US military, again for the qualities of reliability and capacity, which gives American industry even more reason to make sure it remains a viable contender in this market.

Formaldehyde

Continued from Page 7

cers of the pharynx, sinus and nasal cavity (1) related to occupational exposures and (2) to residential exposures by T.D. Vaughn, C. Strader, S. Davis and J.R. Daling, published in the *International Journal of Cancer* December 1986.

• A report to be published in the January 1987 issue of the *Journal of the National Cancer Institute* on cancers of the nasopharynx and oropharynx and formaldehyde exposure by A. Blair, et al.

• An exchange of letters between Charles E. Adkins, acting director of health standards programs at OSHA, and officials of the Motor Vehicle Manufacturers Association on exposures in automotive foundries between 1984 and 1985.

• A study of formaldehyde exposure of Iowa funeral directors issued by the Iowa State Department of Health and the University of Iowa hygienic laboratory, authored by J.A. Euro, et al.

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Chemical Finance

FMC Files Insider Trading Suit

FMC Corporation has filed a lawsuit against, among others, Ivan F. Boesky and various Boesky companies; David S. Brown and Goldman, Sachs & Co.; Ira B. Sokolow and Shearson Lehman Brothers Inc.; and Dennis B. Levine and Drexel Burnham Lambert Inc. The suit alleges insider trading and misuse of information relating to FMC's \$2 billion recapitalization, completed earlier this year.

The lawsuit, filed in the US district court, northern district of Illinois, seeks damages in excess of \$280 million for violations of Federal securities laws and civil violations of the Racketeer Influenced and Corrupt Organizations (RICO) Act, as well as violations of common law.

Commenting on the action, FMC chairman and chief executive, Robert H. Malott, said the free-market system has been "jeopardized by Wall Street players caught in the grip of takeover fever and get-rich-quick schemes," and added that FMC will "aggressively seek appropriate restitution."

In its complaint, FMC seeks recovery of the \$975,000 profit made by Mr. Boesky on his February 21 sale of FMC stock; recovery of the \$17.5 million fee paid by FMC to Goldman, Sachs; recovery of profits of third parties who benefited from insider trading of FMC stock, which includes approximately \$20 million in additional profits accrued by Mr. Boesky; and \$225 million in damages based on the increased cost of its recapitalization.

BP Buys Advanced Composites Unit

British Petroleum Company and Owens-Corning Fiberglass Corporation have signed an agreement under which BP will acquire the Hiteco subsidiary of Owens-Corning's aerospace and strategic materials group for \$240 million in cash. The transaction is expected to be completed in January, subject to Hart-Scott-Rodino and the usual closing conditions.

Owens-Corning is selling the businesses which make up the aerospace and strategic materials group as part of a previously-announced restructuring and recapitalization plan. The group was acquired from Armco, Inc. in September 1985 for \$418 million. Owens-Corning had previously sold three of the group's units. Those remaining to be sold are Ladish Company and Oremel.

BP will effect the transaction through Bristol Composite Materials, Inc., a wholly-owned subsidiary of BP North America, Inc. and part of the BP advanced composites business.

Hiteco, based in Newport Beach, Calif., claims a significant presence in the US advanced composites industry with sales of \$150 million in 1985.

Rorer Keeping Armour Subsidiary

Rorer Group, Inc. will keep Armour Pharmaceutical Company. The company had announced its intention in July to consider divesting Armour with the primary objective of obtaining prescription or consumer pharmaceutical product lines in exchange.

Rorer chairman and chief executive officer, Robert E. Cawthorn, says the company received "several good offers," but that they did not include a "suitable" product exchange. Meanwhile, Armour has a number of new products under development, including a highly-regarded monoclonal antibody product for treatment of hemophilia.

Armour Pharmaceutical, previously a subsidiary of the Revlon health-care group, was acquired a year ago and had worldwide sales of approximately \$160 million in 1985. The company ranks fifteenth in terms of sales among companies serving hospitals in the US pharmaceutical market.

Alcoa Buys Stake in Separations Firm

Aluminum Company of America has purchased a majority interest in Universal Adsorbents, Inc., Atlanta, Ga.-based specialists in chromatography products used in purification processes for the pharmaceutical and biotechnology industries. Terms of the purchase were not disclosed.

UAI will operate as part of Alcoa's separations technology division formed early in 1986. A new plant will be built in Atlanta to broaden UAI's line of chromatographic aluminas and silicas.

Alcoa expects 1987 sales for its separations technology division, which also includes units utilizing ion exchange, filtering and membrane technologies, adsorbents and specialty materials for the petrochemical and catalyst industries and a waste and water treatment company, to exceed \$120 million.

Koppers Authorizes Buy-Back

Koppers Company says its board of directors has authorized purchase of up to 4.5 million shares, or 15 percent of the company's outstanding common stock, as part of a restructuring plan in progress since the end of 1985.

The company currently has about 29.9 million shares outstanding and says it will purchase in the open market or otherwise, including an odd-lot buy-back offer to holders of less than 100 shares.

Charles R. Pullin, Koppers' chairman, says the company has "achieved most of our goal of divesting 10 businesses in 1986." More important, he says the company will have more funds for redeployment than originally anticipated.

Asset sales were expected to generate \$160 million for use in entering new operations related to existing core businesses and to redeem or purchase stock.

Koppers has acquired two companies with annual sales of \$80 million in the construction materials and services business and formed an equally-owned joint venture with annual sales of nearly \$200 million in 1986.

Chemical Financial Briefs

Allied-Signal Inc. is in active negotiations to sell its 15.6 percent stake in Healey Group back to the company. The sale, for about \$450 million, is expected to be completed next month.

Directors of Burris Chemical, Inc. have authorized the company to make an offer to purchase up to 64,497 shares of its common stock held by shareholders other than A.A. Burris, Jr., chairman, and Gerald L. Wheatley, president, and members of their immediate families. The price of offer will be \$75 per share.

Ethyl Corporation, has acquired 13.8 percent of the common stock of Nelson Research & Development Company, Irvine, Calif., and Nelson's board of directors was expected to act last week on a proposal by Ethyl to acquire the remaining shares. Ethyl bought 1,270,000 shares of the company's common stock through a wholly owned subsidiary in a privately negotiated transaction. The price was not disclosed.

GAF Corporation has acquired 2,148,700 shares of CBI Industries, Inc. common stock, representing approximately 9.9 percent of that company's outstanding shares, at an average cost of \$26.21 per share. GAF is filing a Schedule 13D with SEC and intends to file under Hart-Scott-Rodino to permit the company to purchase over 10 percent but under 25 percent of CBI shares. CBI, based in Oak Brook, Ill., owns industrial gas maker, Liquid Carbonics Industries Corporation, which contributes one-third of revenues.

COATINGS & PLASTICS

Carbon Black Producers Push For Higher Prices this January

Higher raw material costs and lower selling prices have had a significant impact on carbon black margins this quarter. Responding to a 25 percent increase in carbon black oil costs, producers of the pigment intend to raise furnace black selling prices in January, a move which should help restore some health to the enervated market.

Columbian Chemicals Company was the first producer to call for higher selling prices two weeks ago, when it announced a 7 to 8 percent increase in carbon black selling prices to take effect January 5.

Last week, Ashland Chemical Company, J.M. Huber Corporation, Cabot Corporation and Sil Richardson Inc. followed with 1-cent-per-pound increases for January 15.

These increases will bring selling prices for Huber's N-500, N-299 and N-700 grades to 23.25 cents per pound, 25 cents per pound and 25 cents per pound, respectively. Prices for Sil Richardson's tread grade products N-10 and N-339 will be 23.25 cents per pound and 24 cents per pound.

Prices for the pigment followed oil for the last three quarters of 1986. Through March, CBO prices dropped from \$21.50 per barrel to \$16 per barrel, carbon black tabs fell a total of 3.25 cents per pound.

Between March and August, they slipped an additional 2.75 cents per pound; pigment prices were last officially changed in July, when producers cut selling prices by 1 cent per pound as CBO fell to a low of \$9.50 per barrel (CMR 8/4/86; page 26).

CBO COSTS UP
Over the fourth quarter, however, crude oil and CBO prices began to climb. In October and November, CBO values formed a total of 10¢ per barrel, bringing them back to second quarter levels of \$12.50 per barrel.

Despite this increase, carbon black producers were unable to pass along higher costs, and have been selling material at today's price levels.

Imports of both finished rubber goods and carbon black pigment have weakened the US market considerably in the past four years. Although they still expect a negative trade balance, producers say that pigment imports have fallen this year.

There has been no abatement of finished goods import levels however; increased passenger car tire imports are expected to siphon off market growth this year. Tire application accounts for more than 55 percent of the total annual output of carbon black. With tire exports up to around 35 million units this year, producers say demand should remain flat at last year's level.

PLASTICS MATERIALS

PHENOLIC RESINS — The Forest Products Division of Borden Chemical Company will raise prices for its phenolic resins on January 1, the company announced last week.

Prices for its 40 percent liquid grades will increase by 1¢ per pound on that date; prices for other grades will vary depending on solid content.

Borden's Industrial Phenolics Division raised prices for industrial phenolic resins last week, moving prices for flake, powder and liquid grades up from 1¢ per pound to 4¢ per pound, depending on grade. Borden's Specialty Resins led this price increase movement, announcing comparable price increases after phenol producers announced January increases (CMR, 12/8/86; page 8).

PRIME PIGMENTS

COPPER OXIDE — C.P. Chemicals Inc., a leading producer of cupric and cuprous oxides, is raising selling prices for its wood-treatment grades of black cupric oxide by 6¢ per pound, immediately. The increase, the

first since last year, will bring the market price for truckload quantities of the oxide to 92¢ per pound.

A spokesman for another leading producer indicated that his company also plans to raise selling prices for comparable product lines in January, but formal announcements have

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

COATINGS INDEX

The Coatings & Plastics Index reflects the prices of 13 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986	306.4
Dec. 11, 1986	308.4
Dec. 22, 1986	308.4
Dec. 20, 1985	306.4

Chemical Prices Start on Page 28

not yet been made, and an effective date has not been established. Remaining producers have not announced price moves.

Increased raw material costs are said to be driving this increase, along with heightened demand. Traditionally, most raw material metal has been derived from spent metal, a byproduct of printed circuitboard manufacturing. Last year, the number of circuitboards produced fell, lowering the amount of available spent material. Lower circuitboard production has continued this year, producers say. Although the fall in production is "not precipitous," says one, it has nevertheless forced them to turn to more expensive pure metal material. Currently, more than half of the total raw material metal is being drawn from pure metal stores. While inexpensive raw material stocks have decreased, demand for wood-treatment grades has risen sharply. Although it is not expected to sustain this growth, the market for this grade of product has seen 10 to 15 percent annual growth for the past 3 to 5 years.

The oxide is also used as a catalyst, an organic dye intermediate, and an additive in ceramic production.

IRON OXIDE — Last week, Mobay Corporation officially announced that it will raise prices for its "Bayferrox" synthetic iron oxide pigments by 3¢ per pound on January 1.

New list prices for "Bayferrox" reds will range from 66¢ per pound to 70¢ per pound; those for "Bayferrox" yellow, from 64¢ per pound to 67¢ per pound. "Bayferrox" blends will sell for 68¢ per pound.

Prices for the pigment were last increased in 1982, then lowered again in April, 1985.

So far, other domestic producers have not announced any pricing changes.

MISCELLANEOUS

ACTIVATED CARBON — American Norit raised prices for some of its "Darco" brand powdered activated carbon on December 1, the company announced last week. The price for its primary general purpose product, "Darco" S-61 is now 50¢ per pound higher, at 61¢ per pound.

Increased manufacturing costs were cited as reasons for the increase. According to D.K. Colona, "Darco" sales manager, this is the first time prices for the product have been increased in over four years.

Calgon Carbon Corporation, another major producer of activated carbon, increased prices for its product lines in March by 2.5 to 3 percent, while the Ceca Division of Atochem Inc. raised prices a comparable amount in April.

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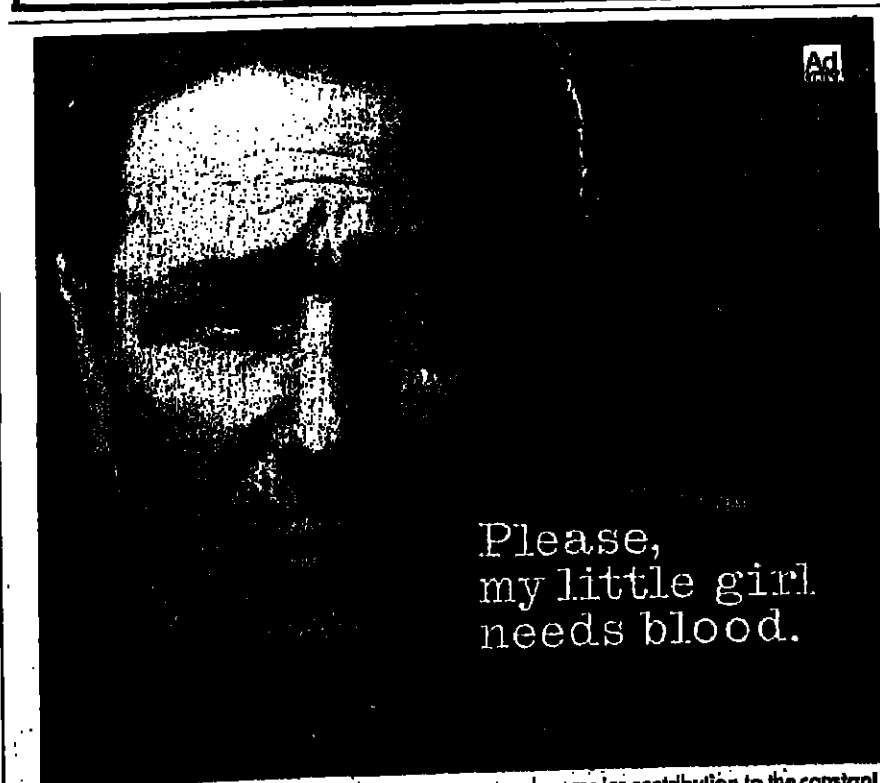
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An index of weekly chemical market reports is on the back cover.

CHEMICAL MARKETING REPORTER

Perchloroethylene, dry cleaning grade, 2011

Phthalocyanine blue toner, water dispersible, bibls., same as above	8.45	17.30
Phthalocyanine green toner, all grades, bibls., frt. add. E. of Rockledge, Fla.	9.30	14.00
Phthalocyanine green toner, all grades, bibls., same basis	8.85	9.45
Phthalocyanine green toner, 600-1000 lbs. lots	8.61	-
Piccolines, acid, mixed, bibls., same as above	2.81	-
Picric acid, pure paste, 25-lb. cans, c.i., dry basis, f.o.b. Charlotte, N.C.	6.00	-
Picric acid, 25-lb. cans, U.S. dry basis, f.o.b. Chicago, N.C.	5.00	-
Pigment green B, bibls.	1.20	-
Pigment hydrochloride, USP, dms.	1,600.00	2,000.00
Pinenes see Allopates	-	-
Pinenol oil, c.i. dms.	13.80	-
Pine oil, 80% min. alcohol content, bulk, f.o.b. works	47.00	63.00
Pine oil, c.i., U.S.	same	same
a-Phenene, perfume grade	81.00	54.00
tech. grade	18	23
b-Phenene, perfume grade, terials	2.80	-
tech. grade, terials	35	40
Piperazine, arylid., dms., frt. add. E.	1.80	-
Piperazine citrate, 58%, dms., 1,100-lb. lots, frt. add.	2.25	2.35
Piperazine dihydrochloride, 40%, dms., c.i., frt. add.	2.00	-
Piperazine hexahydrate, 44%, dms., 1,100-lb. lots, frt. add.	1.60	-
Piperazine phosphates, 42%, dms., 1,100-lb. lots, frt. add.	1.80	-
Pipridine, 98% min. dms., c.i., U.S. works	8.92	-
Polymerized butadiene, divd. E.	6.00	-
Polymethyl methacrylate, Troy oz.	468.00	-
Polycarbonate resin, pellets, nat. U.S. frt. add.	1.84	1.86
Polyester resin, unsaturated, g.p., orthophthalic, bulk, frt. add.	51	53
isophthalic, same basis	58	62
Polyethylene resin, high-density, blow molding, g.p., hopper cars	44	52
Injection molding, g.p., hopper cars, frt. add.	43	46
extrusion, g.p., hopper cars, same basis	47	46
wire and cable, nat., hopper cars, same basis	54	65
wire and cable, black, same basis	65	71
Polyethylene resin, low-density, film liner, hopper cars, frt. add.	35	30
clearly film, hopper cars, frt. add.	35	30
pellet shrink film, hopper cars, same basis	35	-
extrusion coating, hopper cars, same basis	37	40
g.p., hopper cars, same basis	37	30
Polyethylene linear low-density g.p. resin	36	44
blown film resin	40	44
cast film resin	40	44
Polyethylene resin, low-density, injection molding, g.p., hopper cars, same basis	45	44
linewire, CATV, power cable	70	1.10
wire and cable, thermoplastic, low voltage, natural color, same basis	80	89
wire and cable, XLPE low voltage, 14% carbon black, same basis	69	77
wire and cable jacketing, black, lb.	68	67
Polypropylene sulfate, USP, bulk, 50-million units min.	62	-
Polypropylene resin, terials, monomer, 20,000-lb. lots, works	73	-
Polypropylene resin, terials, triisocyanate, 20,000-lb. lots, works	73	-
Polypropylene resin, terials, polypropylene, g.p., nat. U.S. frt. add.	45	44
copolymer, med. impact, nat. same basis	50	44
high impact, same basis	53	44
Colored material etc. per lb. higher for each grade	-	-
Polystyrene resin, crystal, nat., hopper cars, frt. add.	48	-
Impact, nat., hopper cars, same basis	51	-
SS	51	-
high heat, high impact, terials, hopper cars, same basis	52	-
expandable beads (EPS), piking grade, 1,000-lb. lots	99	-
modified, same basis	73	-
Polyvinyl alcohol, fully hydrolyzed, medium viscosity, lbs., c.i., divd.	100	1
partially hydrolyzed, medium viscosity, lbs., c.i., divd.	1.05	-
Polyvinyl chloride resin, g.p., homo-polymer dispersion, lbs., U.S. divd.	50	-
g.p. suspension, 100-lb. bags	38	-
pipe grade, bulk, same basis	47	-
film grade, bulk, same basis	37	-
Polyvinyl chloride, terials, chloro-parene, same basis	58	-
g.p. copolymer suspension, same basis	48	-
Popyseed, Dutch, lbs.	58	68
Turkey, lbs.	58	68
Potash agricultural (see Potassium terials)	-	-
Potash, caustic, liq., 45% basis, terials, works	100	13.00
West Coast, 50% U.S. terials, ext. max.	100	18.08
ref. flake, 58-62%, 400-lb. lots, works	100	42.35
Potassium acetate, 80% gran., dms., works E.	90	-
Potassium bicarbonate, tech., gran., lbs., c.i., works	31 1/2	-
Potassium bicarbonate, 90% gran., dms., U.S.	72	-

Potassium tetraborate, gran., bgs., c.l.		
works,	lb.	1.10
dms., same basis	do.	1.15
Potassium tetraborate powder (f.p.), per ton higher		
Potassium thiocyanate, USP, crystal,		
220-lb. dms., 5-lm. lots	lb.	4.01
tech. dms., 5-lm. lots	lb.	4.07
Potassium titanate, dms., c.l., works	lb.	.62
.	lb.	.714
Potassium-titanium fluoride, tech., dms., works, frt. squibid.		
Potassium-zirconium fluoride, tech., dms., f.t., works, frt. squibid.		
Prednisone USP, dms., 5 kilos or more	lb.	.78
Prednisolone acetate, USP, dms., 5 kilos or more	gram	1.03
Prednisolone, anhyd., USP, dms., 5 kilos or more	gram	1.12
Procaine hydrochloride, USP, tech. lot grade, dms., 2,000-lb. lots, frt. all'd	lb.	4.95
Procaine hydrochloride, USP, ampule grade, dms., 1,000-lb. lots, frt. all'd	lb.	5.76
Propionylglycid, tanks, f.o.b. works	lb.	.354
Propionic acid, syn., pure, l.o.b. divd. E	lb.	33
n-Propyl acetate, tanks, divd.	lb.	.53½
n-Propyl alcohol, tanks, divd.	lb.	.42
n-Propyl cellosolve, tanks, divd.	lb.	.44
n-Propyl galata dms., 100 to 2,000-lb. lots, divd. E	lb.	11.50
n-Propyl-p-hydroxybenzoate, USP, 500 kilos	kilo	10.80
tech., 500 kilos, f.o.b.	kilo	10.36
Propyl paraben [see n-Propyl-p-hydroxybenzoate]		
Propyl thiorazil, dms., 50-kilo lots or more	lb.	56.00
n-Propyamine, dms., c.l. divd.	lb.	.75
n-Propylene, polymer grade, f.o.b. Tex. and La Gulf Coast point, lb. chemical grade same basis	lb.	154
.	lb.	40
Propylene glycol, indust., tanks, f.o.b. USP, tanks, f.o.b. E	lb.	43
.	lb.	43
Pyridine, chem. monomethylalcohol, tanks, divd. E	lb.	.49
Pyriplene oxide, tanks, f.o.b. works, frt. squared	lb.	.47½
Pyrium salt (see Pyriminophosphate)		
Pumice, dom., fine, 4F-0, bgs., ton medium, 0½-1½, bgs., ton lots	ton	270.00
coarse, 2-extra coarse, bgs., ton lots	ton	300.00
Pumice, imp., Italian, fines, bgs., ton lots f.o.b. East Coast	ton	280.00
medium, bgs., ton lots f.o.b. East Coast	ton	350.00
coarse, bgs., ton lots f.o.b. East Coast	ton	300.00
Pyrazosole red (red 3B), dms., works	lb.	13.00
Pyrethrum flowers, one grd. 0.8% pyrethrins, ton lots, frt. all'd, lb.	lb.	1.81
Pyrethrum, purif., 20% pyrethrins, dms., works	lb.	37.50
Pyridine, red, 2-deg., c.l., works	lb.	5.90
.	lb.	5.70
Pyridoxine hydrochloride, USP, 100 kilos, f.o.b. more, divd.	lb.	38.00
Pyrite, Canadian 4 8-5-0 % S, mines	long ton	4.50
Pyrogallol acid (see Pyrogallol)		
Pyrogalatol, 100-lb. dms., 1,000-lb. lots, divd.	lb.	13.70
.	lb.	15.25
Quassia chips	lb.	.57
Quinacridone maroon, dms., frt. all'd	lb.	27.00
red, dms., frt. all'd	lb.	24.25
violet, dms., frt. all'd	lb.	24.80
Quinine sulfate, bgs	lb.	2.00
Quinidine ascorbic acid, USP, 1,000-oz. dms., 2,000-oz. mfr. mkt. oz.	oz.	4.20
Quinine, NF, 1,000-oz. dms., 2,000-oz. mfr. mkt. oz.	oz.	2.46
Quinine sulfate, USP XVII, 1,000-oz. dms., 2,000-oz. mfr. mkt. oz.	oz.	2.30
Quinolone, C.I., frt. all'd	lb.	1.49
tanks, same basis	lb.	1.43
Racetan, tech., 304 molecular wt	lb.	2.12
Ramellitol, USP, 50-250 lbs.	lb.	8.80
250-500 kilos	kilo	8.80
600 or more kilos	kilo	1.07
Reagent grade, 98% min., c.l., works	lb.	22.00
Resorcinol, dms., 100 lbs.	lb.	1.88
Retenuelex serpentine rock, powd., base, dms., 1,000 lbs.	lb.	9.25
Red cermet, No. 40 [see Cermet No. 40]		
Red precipitate, [see Mercurochrome red]		
Reserpine, USP, bgs., tota., works	lb.	3.95
Resorcinol tech., cya., t.l., works	lb.	1.98
Resorcinol, USP, crystal, dms., 50 kilos	kilo	9.35
.	kilo	9.35
powd., dms., same basis	lb.	1.98
Resorcinol monoacetate, dms., 1,000 lbs. or more	lb.	9.25
Rhodamine red toner, microlydated, PMA, csa, works	lb.	11.60
tungstated, PTMA, dms., f.o.b. works	lb.	105.00
Rhododol, 25-lb. cma	lb.	1.25
ayrl, dms., 100 lbs.	lb.	.45
Ribuhard rock, India, whole, bgs., 25 powder, bgs., 25 kilos	kilo	34.50
Riboflavin, feed grade, 25 kilos, divd.	kgz.	48.50
Riboflavin, USP, 25 kilos, divd.	kgz.	198.00
Riboflavin 5-phosphate-sodium, 25 kilos, divd.	kgz.	198.00

Sodium bicarbonate, USP, powd., mag.	17.05	
grade, bgs., c.l., t.l., works, frt.	18.05	
equivalent	18.05	
coarse, same basis	100 lbs.	
fine, same basis	100 lbs.	
gran. same basis	100 lbs.	
gran. fine, same basis	100 lbs.	
17.60		
Sodium bichromate, gran., bgs., c.l., t.l.		
works, frt. equivalent	17.57	
Sodium bifluoride, 400°-450°-500°		
frt. equivalent	17.78	
100-lb. bgs., c.l., same basis	17.78	
Sodium bisulfate, bulk, c.l., works	175.00	
dms., c.l., t.l., works	13.00	
Sodium bisulfite, anhyd., dms., c.l., t.l.		
works, East	28.50	
works, West	32.00	
Sodium bisulfite, soln., 38% bulk, 100%		
basis works	20.00	
soln., 100%, d.b.s. works, West 100 lbs.	20.60	
photographic grade, 43% soln.		
works	21.60	
Sodium borate, HF, gran., bgs., c.l.		
powd., same basis	51	
Sodium borohydride, powd., dms.		
1000-5000 lbs. works	19.88	21.80
Sodium borohydride, dms., c.l., t.l.		
soln., 12% NaBH ₄ , 100% basis	17.45	
Sodium bromide, 98%, gran., 400-lb.		
dms., c.l., t.l., works	1.04	
Sodium carbonate, decahydrate, bgs.		
c.l., t.l., works	264.00	
Sodium carbonate, cryst. monohydrate (see Soda, ash)		
Sodium carbonate, monohydrated		
leas. c.l., t.l., works	382.00	
Sodium carboxymethylcellulose (see CMC)		
Sodium chlorate, bulk, t.c., t.l.		
delivered, N.E.	330.00	
delivered, S.E.	335.00	
Sodium chlorate, cryst., 450-lb. dms.		
c.l., works E.	27	
Sodium chloride (see Salt)		
Sodium chloride, USP, gran., bgs.	28	
Sodium chlorite, tech. dms., c.l.		
works	1.17	1.27
Sodium chromate, anhyd., dms., c.l.		
t.l., works	.67	
Sodium chromate, tetrahydrate, bgs.		
c.l., t.l., works	.64	
Sodium citrate, gran., anhyd., 200-lb.		
dms., c.l., t.l., N.Y.	1.95	
Sodium citrate, USP, gran., shipping		
100-lb. bgs., t.l., f.o.b. ship-		
ping point	.74½	
Sodium cyanate, dms. 1,000-lb. lots		
works	.85	
Sodium cyanide, briquettes, 99% min.,		
200-lb. dms. min.,	.71	
fin.		
Sodium decatec, anhyd., dms., c.l.		
works	.88	
Sodium disulfate, FCC, 50-lb. bgs.		
l., divd. E. of Rockles	.61	.67
Sodium disulfate, tech., 50-lb. dms.		
c.l., works	.52	
Sodium erythrobate, powd., gran., t.l.		
or mixed t.l., f.o.b. shipping	2.60	2.85
frt. or W. or Denver 2% pound higher.		
Sodium ferrioxalate, bgs., t.l.		
works	.60	
Sodium fluoborate, tech., gran., dms.		
t.l., works, frt. equivalent	.37	
Sodium fluoride, white, works, frt. equi-		
valent	.63½	
100 bgs., c.l., same basis	.80	
USP powd., 200-lb. dms., t.l.		
f.o.b. shipping point	4.69	
Sodium formate, bgs., c.l., works	.20	
Sodium gluconate, tech., 50-lb. bgs.		
2,500 lbs. or more frt. dms.	.80	
Sodium hydride oil dispersant 50% NAF		
100-lb. dms. 100-lb. dms.	1.88	
works		
Sodium hydrosulfide (see Sodium sulfhydrate)		
Sodium hydrosulfide, dms., c.l., t.l.		
f.o.b. shipping point	.64	
Sodium hydroxide, USP, pellets, 100-		
lb. dms., c.l., t.l., works, frt.	.98	1.06
equivalent		
Sodium hypochlorite, 50% (see Equival.)		
Sodium hypochlorite, EN grade, 300		
lb. dms. f.o.b. works	1.426	1.50
110 lb. dms.	1.47	1.52
Sodium hypophosphite (see Sodium sulfite)		
Sodium hypophosphite, 300- to 600-		
lb. lots, dms. frt. equivalent	1.72	
Sodium lauryl sulfate, 30%, tanks,		
f.o.b. works	.29	.32
Sodium metaborate, 98% min., 100-		
lb. works	26.50	
Sodium metabisulfite (see Sodium bisulfite)		
Sodium metaborate, octahydrate,		
gran., bgs., c.l., t.l., works	.38	
tetrahedral, gran., bgs., c.l.		
works	.49	
Sodium metasilicate, 12-40, bricks, dms.		
c.l., works	.93	
fused, dms. 24-lb. lots, more		
works	.70	.80
tanks, works		
Sodium metavanadate, 98% min., bgs.		
c.l., f.o.b. shipping point	61.50	
equivalent		
food grade, bgs. c.l., f.o.b. frt. equi-		
valent	68.25	

CHEMICAL PRICES					
WEEK ENDING DEC. 19, 1986					
Sorbitan monooleate, dms., c.i., l., 30,000 lb. min., f.o.b. work.					
Sorbitan trioleate, c.i., l., min. f.o.b. works.			.76	-	
Sorbitol, USP, reg. 70% aqueous, dms., c.i., f.o.b. shipping tanks, f.o.b. shipping point.			.35	-	
gram, dms., c.i., l., works.			.30	-	
powd., dms., c.i., l., works.			.70	.74	
Soybean meal (See, Fat & Waxes market report.)			.58	.72	
Soybean oil acidulated, soapstock, 95% acid, tanks, New York lb.			14	15	
Soybean oil, acid, dist., dms., lb.			48	59	
tanks.			43	44	
s.d., dms.			47	58	
tanks			38	43	
Spermil lauric acid, w/o, 90-100%			2.50	2.70	
Spermatin of Chinese, 60%			1.60		
China, 80%			8.00		
Far West, native			9.50		
Far West, w/o.			18.65		
Spruce oil, c.i., l.			.00		
St. John's bread, cobble, lbs.			.28	.30	
Stannic chloride, anhyd., dms., works.			N.A.		
Stannic oxide, dms.			N.A.		
Stannous chlorate, anhyd, dms. wks			N.A.		
Stannous fluoride, liq, conc. dms.			2.50		
l.f., work, frt. equald.					
Stannous oxides, dms.			N.A.		
Stannous sulfates, dms. works.			N.A.		
Stearic acid, double pressed, bulk			26	39	
single-pressed, bulk			28	375	
Steam-pressed, bulk			32	40	
Stramonium leaves, bgs.			15	20	
Streptomycin sulfate, USP, bulk, kio.			47.00		
Strontum carbonate, glass grad, bgs.					
U.S. work.			.37	1	
Strontium nitrate 50-15 bps, c.i. works			51.50		
Styrene monomer, 99.8% min. t.c. c.i., f.o.b. shipping			23	27	
Styrene-acrylonitrile resin, nat, bulk, f.o.b plant			77		
cryst, bulk, same basis			77	81	
clear, same basis			77	81	
Stryal acetate, dms.			2.35		
Succinic acid, purif., cryst., dms., l. frt. advd.			2.00	2.10	
Succinic anhydride, dms., c.i., l., f.o.b work.			1.71		
Sucrose, rolo, white, bgs. c.i. f.o.b refly, E.C. 100 lbs.			33.10		
Sucrose saccharate, isobutyrate, 90% dms., l. divid.			1.18		
tanks, divid.			1.10		
100%, dms., l. divid.			1.18		
Sucrose octa-acetate, dehydrating grade, 100-lb. dms. f.o.b works			12.50	13.50	
Sulfacetamide, dms., 500 kilos.			39.50		
Sulfabenzamide-sodium, dms., 500 kilos.			25.00		
Sulfacetaimide, USP, dms., 500 kilos.			20.00	23.50	
Sulfadiazine, USP, powd, dms., 500 kilos.			53.00		
Sulfadiazine-sodium, USP, dms., 500 kilos.			40.70		
Sulfamerazine, USP, microcrystals, dms., 500 kilos.			33.50		
USP, powd, dms., 500 kilos.			32.00		
Sulfamethoxazole-sodium, USP, powd, dms., 50 kilos.			13.00		
Sulfamethoxazole-powd, bulk kilos.			9.00	10.00	
Sulfamic acid, cryst., bgs., c.i., l. works			38.00	41.00	
Sulfamic acid, anhyd., dms., c.i., l. works.			.36		
Sulfathiazole, NF, reg. 1,000-lb dms. frt. equald.			2.00		
Sulfuric acid, 20%, bgs, f.o.b. works.			.87%		
Sulfquinazoline, veterinary, grade, dms.			8.00		
Sulfur, crude, 99.9% min. purity, c.i. vessels, Gulfports			long-tion	118.00	120.00
L.O.b. L.A. refly			long-tion	120.00	122.00
recovered, dms., NF, long-tion			long-tion	120.00	122.00
recovered, dms., NF, long-tion			long-tion	135.00	
L.O.b. tanks, Alberta, Canada, for US delivery			long-tion	86.00	85.00
derft. ex-Tarapur, F.R.G.			long-tion	162.50	
Tarapur prices subject to 10 per long-tion discount for most customers.					
Sulfur, crude, 99.9% min. purity, cont. flour, 50-lb. bgs., c.i., minse basis			100 lbs.	13.80	-
lump, same basis			100 lbs.	13.50	-
Sulfur, refld, 99.9% min. purity, rolls 50-lb. bags, c.i., minse basis			100 lbs.	17.60	-
flour, light, 50-lb. bgs., same basis			100 lbs.	20.00	-
Sulfur, refld, 99.9% min. purity, min. purity, 50-lb. bgs., c.i. minse basis			100 lbs.	28.00	-
Sulfur, rubbermakers, 99.9% min. purity, cont. exp., 55-lb. bags, c.i., minse basis			100 lbs.	14.80	-
fine, 98% min. pressing through 325 mesh, same basis			100 lbs.	15.80	-
Sulfur donor, dms., c.i., works				24	
tanks, same basis				1.774	
Sulfur dioxide, liq, bulk, c.o. l., f.o.b. work.				230.00	
Sulfur monochloride, dms., c.i. works, frt. equald.				28%	
tanks, same basis				16%	

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(4) 50, (1) 30, GALLON

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(1) 5,000, (1) 4,000, (1) 3,000, (8) 2,000, (9) 1,500, (4) 1,000, (1) 800, (7) 500,
(1) 300, (3) 250, (5) 200, (1) 150, (3) 100, (3) 50 GALLON

TANK FARMS

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STAINLESS STEEL 316SS & 316LSS: (10) 10,000, (1) 8,000, (3) 7,500, (2) 6,000,
(3) 5,000 (3) 4,000 GALLON

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LITHCOTE: (1) 10,000 GALLON

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750,000 Sq. Ft. Buildings...50 acres of land

750,000 Sq. Ft. Buildings...35 acres of land

Model 5057 Raymond Roller Mills, 40 High-Intensity mixers,

Electrical sub stations and switch gear, Dust Collectors,

Material Handling Systems, Carbon Extruders, 84" Lathes,

14000 Ton Hydraulic press, Complete Autoclave System.

Complete in plant Railroad

260MM GPPD SYNTHETIC GAS PLANT

NEW 1976... COMPRISED OF TWO TRAINS... 60 ACRES OF LAND

AIR COMPRESSORS: 5,015 CFM @ 300 RPM, 250 HP (4)

BOILERS: 148,822,000 & 91,000,000 BTU/HR VERT. HOT OIL VAPORIZERS (4)

6,000,000 BTU/HR VERT. HOT OIL HEATER (2), 150,000 LBS/HR, B/W PACKAGED

BOILER SYSTEMS (4)

COLUMNS: 192"x120'3" & 144"x140' CS PACKED TOWERS (4)

COMPUTER CONTROL CENTER: FISHER DC2 DIGITAL

FILTERS: 600 GPM DELAVAL SEPARATORS (4)

GENERATOR: 2,000 KVA IDEAL ELECTRIC STEAM TURBINE SET (2)

HEAT EXCHANGERS: CS, 525 SQ. FT. TO 6,900 SQ. FT. (10) SS, 45 SQ. FT. TO 15,500

SQ. FT. (17), AIR FIN: CS & SS, 369 SQ. FT. TO 336,850 SQ. FT. (16)

HYDROGEN REFORMER UNITS: 300,000 SCFH OF 90% HYDROGEN (2)

CO2 REMOVAL SYSTEMS: 125 MMSCFD (2)

MISCELLANEOUS: 670, 170 LBS/HR DEAERATING FEED WATER HEATER (2),

TRIFTHYLENE GLYCOL TO GAS CONTACT DEHYDRATION PLANT (4)

PUMPS: CENTRIFUGAL & ROTARY

REACTORS CS: 55,000 GAL. 701 PSI INT. (4)

15,000 GAL., 554 PSI INT.

12,000 GAL., 638 PSI INT. (4)

1,800 GAL., 500 PSI INT. (2)

TANKS CS: 500,000 GAL., ELEVATED WATER STORAGE, 72"x120'

300,000 GAL., 40"x35", STEAM COIL

44,000 GAL., 20"x20" & 20,000 GAL. 14"x19'

12,500 GAL., 15'8"x20" (2), 11,000 GAL. 250 PSI (3)

6,000 GAL., 10'x15" (2) & 2,000 GAL. 7'8"x8" (2)

24,500 GAL., R/L STORAGE TANKS 12'x28" (2)

WE WILL SELL ENTIRE FACILITY... OR INDIVIDUAL PIECES OF EQUIPMENT

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PLANT SITES

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Steel with Aluminum Fins-15° Per Extended Sq. Ft.
Stainless with Aluminum Fins-25° Per Extended Sq. Ft.

PRICE REDUCED

Triple effect evaporation system — Sodium Service two trains — 600
Ton/Day — Mfg. by Swenson, Monel Construction. Each train consists
of a monitor tank with cone bottom; 60 HP Elbow Pump each effect and
(3) 3300 Sq. Ft. Exchanges Per train; CS Shell and monel tubes. 40 PSI
both sides at 290 Deg. F both sides.

SODIUM CHLORATE SILO SYSTEM

Consists of (6) 18" dia Silos at 6500 cu. ft. each, all interconnected with
12" dia screw conveyors, discharge system designed to convey 15
TPH of product at 80#/cu. ft., bucket loading system designed to
handle 25 TPH of product at a rate of 40 FPM. Complete with rotary
dryer, recycling system and rail loading station. New 1961.

EQUIPMENT INVENTORY SYSTEM

We couldn't find the computer inventory system we needed so we
developed it ourselves. Now we're making it available to the industry.
It's an equipment inventory system with a unique query capability that
allows you to find a specific item by size or functionality. It runs on an
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JUST PURCHASED

WESTERN STATES CENTRIFUGE

48" X 30" PERFORATE, S.S. 316

BOTTOM DUMP, HYDRAULIC, 50 HP

1000 GAL. 316 SS, 100 PSI INT.

12,000 GAL., 638 PSI INT. (4)

1,800 GAL., 500 PSI INT. (2)

TANKS CS: 500,000 GAL., ELEVATED WATER STORAGE, 72"x120'

300,000 GAL., 40"x35", STEAM COIL

44,000 GAL., 20"x20" & 20,000 GAL. 14"x19'

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LITTLEFORD FKM 1200, 316 S/S, 28 cu. ft. working, 60 HP VS
main drive plus 4-5 HP choppers
PFAUDLER 6,000 gal. 316 SS, 100 PSI, bad glass, TW drive
AMERICAN HEAT 1335 sq. ft. spiral heat ex. 316 S/S, 75/75
SPEERY 38" plate & frame, iron, 283 sq. ft., 8.33 cu. ft. hyd.
closer
EPWORTH 4'x5' jacketed steel ball mill, 40 HP
WESTERN STATES 48"x30", perforated, 316S/S, 50HP hyd.
GREEN 80 gal. S/S vac. kettle, 1 cu. ft., 1 HP scraper
PATTERSON-KELLEY 1 cu. ft. "V", S/S, 550 lbs.
CHICAGO BOILER 16P sand mill
ABC FORM-A-MATIC case erector, up to 77/min.

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312-473-4500

Tanks: 250-1400 Gal. storage & mixing, S/S & Fiberglass
5000 Gal. 304 S/S storage tank, vertical, closed, dished hds.
48" X 30" PERFORATE, S.S. 316, 2HP VERT XP
(2) Richmond 3000 Gal. S/S Reactor, 60/30 PSI, 50 HP 2-Std.
Richmond 3000 Gal. S/S Reactor, 60/30 PSI, 50 HP 2-Std.
Horus 500 Gal. S/S Reactor, 60/30 PSI, 15 HP XP VJA.
(3) Pfaudler 30 Gal. S/S Reactor, 60/30 PSI, 15 HP XP VJA.
Horus 500 Gal. S/S Reactor, 60/30 PSI, 15 HP XP VJA.
Jacobson 6000-11 "Universal" Hammer Mill, 100 HP
(2) Enliator Type BHM "Centrifugal", 48" dia., 316 S/S, 100 HP
Pittman 316 S/S, No. D140S15, 20 HP
Holo-Filo Saver-Dryer, 18" dia. X 20' L, C/S, Jkt. trough.
Chromalox 200 KW Hot Oil Unit
Chromalox 20 KW Hot Oil Unit (ALL XP)
Sterling 12 KW Hot Oil Unit
Hockmeyer 60/28 HP High Speed Dispenser S/S, XP 2 Std.
(3) Bannerman model 800 Band Mill, 30 HP XP
Hochmeyer-Coulton 12-30 & 10-20 Band Mills, 40 & 20 HP XP
Patterson Steel Ball Mills, 8"x8" & 8"x8" and other sizes
Abbe 4'x18" Continuous Steel Ball Mill, 60 HP
Patterson & Abbe Ceramic-Lined Pebble Mills from 10"x20" up
Retainer 8'x12" Two Roll Mill, 5 HP
(2) Latsch 8'x8" auxiliary ribbon blenders, 12.25 Cu. Ft. 1 HP
J.A. Day "Mixer" Blenders, 21, Cu. Ft. 316 S/S, 10 HP
110 Cu. Ft. C/D heavy-duty ribbon blender, 12.25 Cu. Ft. 1 HP
(2) 4'x40" L. Tubes, 316 S/S, 10 HP
Don-Drive "Mixer" 10'x10' L. Tubes, 316 S/S, 1 HP complete
Coulton 1-Std. submicron weight-type filter, S/S, model P-2
Turbo-Fine 1.75 Sq. Ft. Lab evaporator, 316 S/S, 1 HP
Nichols/Niro 10 R.D. Spray Dryer, 120 g/hr., 1 HP
Baker Perkins & Randco 600 lbs. min. capacity 24000 gal., C/S, S/S
Heat Exchanger 480 sq. ft., 316 S/S, 75/15 psi
(3) Steel pulverizers, UNIMEX Model PB-10, C/S, 10 HP
(4) Rice extruder, UNIMEX Model RE-12, C/S, 10 HP
Patterson 6-3 Comco S/S 316, 11/2 HP VERT XP

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(312) 842-2200

CENTRIFUGAL COMPRESSORS

By Make, Model, and ACFM

Model	ACFM	Model	ACFM	Model	ACFM
Allis Chalmers		Clark (Cont'd)		Elliott	
VT204	1315	3M5	5350	46M8-6	17300
DHM3	1890	3M3-2	5800	42H2	18453
V-403	5900	2M6	5840	Ingersoll Rand	
V-402	9110	24X24	6750	MMGB-1220	170
DH4M	10400	3M-5	7608	MMGB1321	232
Brown Boveri		553B7	8361	MGA733	1775
VVO 609	20900	3H4	10620	CVS-12	2015
VW0609	21000	3M-6	10700	TYPE L AXI	2472
V907BD	34000	3H4	11950	CDP-416	2540
Carrier		3H4	11950	CDP-416	2540
18VT352	3350	4H4	19365	MTG633	2550
18P351	4180	4M3	20200	MTG633	2810
18W453	4740	M4	21600	900X20	2960
18W452	6270	4M6	21600	TYPE L-AXI	3510
18V470	7200	5H4	23850	CI40M2	4220
18PM451L	10700	4M	25600	MGG633	4730
18PM451Y	12000	6H4	39100	CVS14	5800
18WV502	17790	6H4	52180	MGBB	7270
18S601	31900	6M3	56500	MGA642	7500
Cooper Bessemer		6M3	98300	CVS-14	8750
RB9-8B	277	DeLaval		CVS-14	9380
RB9-8B	445	2C	3260	MGA-177	36150
RB9B	1048	6C148	5980	MMA-3100	54200
RB6B	3448	Demag		MMA-4100	57750
RC8B	3525	VK63	45100	Joy	
RF2B24	13100	Elliott		TA25V	2440
RE7S	18773	29M-9	3055	TA-30	3280
REB-7S	30000	29MS-9	3055	TA-30	3280
Clark		18HV470	3360	GMSG12	10860
1M8	550	29MS9-8	4390	Rotoflow	
1M5	1150	26MS9-81	4390	60K	6750
1M9-8	1477	29MS9-8	4390	Worthington	
1M9-8	1477	29M7	4750	GUR-356	3980
2B	1611	29MS8-7	4750	GUR-4K2	7050
2M9	1966	40P	6610	VC708	11300
2M-7	2223	29M3	7093	DEMAG	24000
3M6	2403	38MB-41	7450	York	
2M7	2490	38M2	9481	23268A	2830
1M8	2575	38M3-2	10700	CALL JACK BURCH	
2BF8	3221	18P452	14000	713/471-4900	

CHEMICAL PROFILE

SODIUM SILICATES

December 22, 1986

SUPPLY	
PRODUCER	CAPACITY*
Chemical Products, Cartersville, Ga.	15,000
Du Pont (4 sites)	105,000
Engelhard, Attapulgus, Ga.	7,000
Ethyl, Pasadena, Tex.	100,000
Grace, Lake Charles, La.	65,000
J.M. Huber (2 sites)	100,000
Mayo Products, Mableton, Ga.	25,000
Occidental (7 sites)	250,000
PPG (2 sites)	110,000
PQ (12 sites)	420,000
Stauffer (2 sites)	70,000
Z-Tech, Bow, N.H.	1,000
Total	1,268,000

*Short tons per year, anhydrous glass basis. Du Pont has announced it will sell three production sites to Power International Ltd., Melbourne, Australia, by the end of 1986. Du Pont will keep its East Chicago plant for captive requirements. J.M. Huber's second site, at Havre De Grace, Md., will come on stream in early 1987. Occidental acquired Diamond Shamrock's chemicals business in August 1986. Stauffer's parent company, Chesebrough-Pond's is being acquired by Unilever NV. Z-Tech, a subsidiary of ICI Australia, was acquired from Ferro Corporation in September 1986. CPC, Du Pont, Occidental and PQ are merchant sodium silicate producers. Z-Tech and Engelhard sell byproduct in the merchant market. Ethyl, Grace, Huber and PPG consume all product captive in pigment and catalyst production. Mayo and Stauffer make only sodium metasilicates; CPC, Occidental and PQ also make metasilicates. Profile last published 12/26/83; this revision, 12/22/86.

DEMAND
1985: 740,000 tons; 1986: 740,000 tons; 1990: 800,000 tons.

GROWTH
Historical (1976-1985): 0.5 percent per year; future: 1 to 2 percent per year through 1990.

PRICE
Historical (1952-1986): High, \$6.30 per 100 pounds, 40.6 to 41.6 degrees Baume, 3.22 to 3.25 ratio, tanks, frt. equald.; low, 90c. per 100 pounds, same basis. Current: \$6.30 per 100 pounds, same basis; \$15.70 per 100 pounds, 3.22 to 3.25 ratio, 100 percent (solid), frt. equald.

USES
Soaps and detergents, 29 percent; silica-type catalysts and gels, 26 percent; pigments, 22 percent; water, paper and ore treatment, 6 percent; paper adhesives, 5 percent; roofing granules, 4 percent; other, 8 percent.

STRENGTH
Refinery fluid catalyst demand is up as oil refiners look to increase octane yields in the face of lead phase-down and lower gas prices. New techniques in waste-water treatment are creating silicate demand as a binding agent.

Continued on Page 45

Glaxo Unveils A New Agent For Disorder

A new compound under development by Glaxo Holdings Plc of the UK has the potential to improve the treatment of such disorders as schizophrenia and anxiety, the company reported Friday (December 19) at a meeting of the British Pharmacological Society in London. Glaxo also said the compound might be used to control the nausea and vomiting associated with anti-cancer treatment. Glaxo stressed that the compound is still at a very early stage of development. Human clinical trials over the next five years should reveal the full extent of the advance in therapy represented by the compound, the company said.

BLOCKS DOPAMINE RECEPTORS
Glaxo said the drug works by blocking certain receptors in the brain, resulting in the modulation of other major neurotransmitter systems that affect various physiological functions.

According to Glaxo, animal studies have shown that the compound can control the dopaminergic overactivity in the brain which is thought to be responsible for the symptoms of schizophrenia. This is accomplished without the drug affecting normal behavior, Glaxo says.

The sedative and movement side effects of current drug treatments are unlikely to be seen with the Glaxo compound, the company adds.

Schizophrenia, a disabling disorder involving loss of contact with reality, affects up to 1 percent of the population. Its cause is still unknown.

Velsicol Buyout Is Complete; Terms Unknown

Management of Velsicol Chemical Corporation have completed the buyout of the pest control and specialty chemicals firm from Farley Industries. Financial terms have not been disclosed.

Arthur R. Sigel, head of the five-member executive team purchasing Velsicol, will serve as president and chief executive officer. He said the timing of the buyout is "ideal" for the management group.

"There has been significant investment at Velsicol during the past four to five years towards growth," he said. "The foundation for this growth has been laid by our management group, so we are pleased to be able to assume full direction of the company at a time when Velsicol is on the verge of realiz-

ing some major goals." Joining Mr. Sigel in the purchase are Lawrence M. Hartman, executive vice-president; Charles H. Frommer, vice-president of regulatory, government and public affairs; David M. Frederick, vice-president of sales and marketing; and Charles R. Hanson, vice-president of environmental management.

Velsicol introduced a new rodenticide, "Vengeance," to the professional pest control industry in September 1986. The company has also just announced it will be adding another soil termiticide to its product line in 1987.

DETAILS UNDISCLOSED
While unable to disclose details at this time, Mr. Sigel said Velsicol expects to make additional announcements regarding new pest control and specialty chemicals products. Progress on new products will not be disrupted by the change in ownership, he said.

"The management team is very pleased that so many of Velsicol's professionals have chosen to remain with company," Mr. Sigel said.

"We are a tight, compact group that is used to working together. And we are excited about the future of Velsicol and confident in our abilities," he said.

Mr. Sigel said Velsicol will employ nearly 500 people, including field sales personnel and workers at four manufacturing plants, located at Marshall, Ill., Bayport, Texas, and at Memphis and Chattanooga, Tenn.

Velsicol also maintains six international offices for sales and service: Sydney, Australia (Australia and New Zealand), Tokyo, Japan (Japan and Korea), Sao Paulo, Brazil (Latin America), London, England (Western and Eastern Europe), Manila, Philippines (Southeast Asia), and Athens, Greece (Africa, India and the Middle East).

Cyro Producing Acrylic at Osceola

Cyro Industries has begun production of acrylic sheet at a new plant in Osceola, Ark. The \$25 million facility produces "Acrylite FF" continuously manufactured sheet used in window glazing, picture frames, signs, retail store displays and other applications.

The plant will also manufacture acrylic molding and extrusion compounds for use in automotive lighting lenses, lighting diffusers and other applications. These polymer-manufacturing facilities will be completed in mid-1987. When the facility is completed, Cyro will have a combined polymer and continuous sheet manufacturing capacity of 60 million pounds.

Cyro Industries is a partnership of subsidiaries of American Cyanamid Company and Rohm GmbH of West Germany. The company maintains its corporate headquarters in Woodcliff Lake, N.J., d conducts manufacturing operations at Fortier, La., and Wallingford, Conn. Cyro also operates an acrylic sheet manufacturing plant in Sanford, Maine.

JOBS & PEOPLE



Gary F. Mastro, who has been named executive vice-president and chief financial officer of Diversified Chemicals.

Joseph E. Whalen has been appointed director of management systems for the Diversified Chemicals Company. ERNST A. COLEMAN has joined Norton Performance Plastics as a technology and manager of research and development. CHARLES R. McDONALD has been appointed regional marketing manager in the enhanced oil recovery department of Chevron Chemical Company.

FRANK BONNER has been named technical sales representative as the West Coast member of Rohm and Haas Company's water treatment team. RONALD J. DAVIS has been appointed senior staff counsel and manager of the litigation section of Dow Chemical Company's legal department. MARY J. COLLINS has been named man-



J.E. Whalen Dr. E.A. Coleman

Diversified Chemicals Appoints Two Managers

Diversified Chemicals & Propellants Company has appointed J.R. Fraunheim managing director of the company's new operation in Krefeld, West Germany, and Ron Duncan regional sales manager.

Mr. Fraunheim will continue in his position as vice-president of sales while moving to the Krefeld facility, a plant that will produce cosmetic grade hydrocarbon propellants for the aerosol industry and blowing agents for the foam industry.

Prior to Mr. Duncan's association with Diversified, he had been involved in sales and marketing for Stauffer Chemical Company and Borden Chemical Company.



J.R. Fraunheim R. Duncan

manager of information systems for North America, a newly created position at Norton Performance Plastics.

LAWRENCE B. COHEN has been elected executive vice-president of Cavendish Chemi-



C.R. McDonald S.P. Bonner

cal Company. J.D. BROOKS has been appointed director of sales and marketing for Pennwalt Corporation's Agchem Division.

JOHN M. MOUNT has been named vice-



Gary Zwierson, who has been appointed vice-president of the Food Products Division at National Starch & Chemical Corporation. He will be responsible for food starch product and development and technical service.

president of Chemed and elected a member of the company's board of directors. ANTHONY T. CASTOR III has been appointed president of Inland Specialty Chemicals Corporation, a wholly-owned subsidiary of Great Lakes Chemical Corporation. CARL R. CUTBERTSON has been named Southeast district sales manager for Finetex Inc., Elmwood Park, N.J.

ROLFE B. CHASE has been appointed vice-president of soda products manufacturing at Kerr-McGee Chemical Corporation's Seales Valley, Calif., chemical complex. JOHN R. VANBUSKIRK, general manager of Phillips 66 Company's Plastics Division in Houston, has been selected to head all plastics operations for the firm, and J.R. BENZ, manager



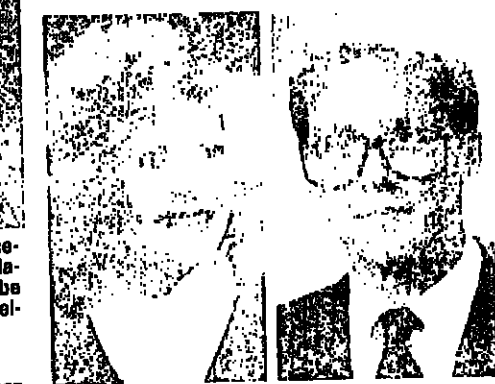
R.L. Davis B.J. Collins

ChemCentral Names Sales Representatives

ChemCentral Corporation has named Kristine Weigel sales representative for the Northern Milwaukee and Eastern Wisconsin territory and Henry Suwyn sales representative in the Grand Rapids, Mich., territory.

Miss Weigel joined ChemCentral in Milwaukee in early 1986 and took her training there.

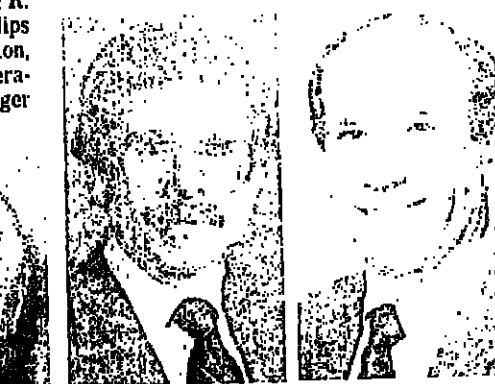
Mr. Suwyn trained for his sales representative position at ChemCentral's Grand Rapids offices.



K. Weigel H. Suwyn

of chemicals and catalyst in Bartlesville, has been named plastics resins manager of the company's Houston chemical complex.

THOMAS F. SANTINI has been appointed vice-president of scientific affairs at de Laire Inc. RICHARD M. MUELLER has been appointed to the new position of director of licensing at Glaxo Inc. D.L. MANIOWE has been named director of food industry



L.B. Cohen J.D. Brooks

marketing for Betz Laboratories. JOHN DOHERTY has been elected vice-president for external affairs at National Starch & Chemical Corp.

MEETINGS CALENDAR

December 22, 1986

JANUARY

ASSOCIATION OF THE NON-WOVEN FABRICS INDUSTRIES, third highlight and fibertel conference, Executive Marriott Hotel, Charlotte, N.C., January 27-28.
CHEMICAL INDUSTRY ASSOCIATION, luncheon meeting, Parkview Meriden Hotel, New York, January 28.
COMMERCIAL DEVELOPMENT ASSOCIATION, 8th annual industrial commercial development course, with Delphi Marketing Services, Inc., Sheraton Centre Hotel, New York, January 28-29.
SOAP AND DETERGENT ASSOCIATION, 60th Annual Meeting and Industry Convention, Boca Raton Hotel and Club, Boca Raton, Fla., January 29-February 1, 1987.

LATER ON

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, center for chemical process safety, international conference on chemical safety issues, Omni Shoreham Hotel, Washington, D.C., February 3-5.

AMERICAN PETROLEUM INSTITUTE, 12th world petroleum congress, international forum for exchange of technical information about the petroleum industry, Houston, Tex., April 26-May 1.

ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS, 12th annual Spring workshop and exhibition, Skyline Ottawa Hotel, Ottawa, Ontario, Canada, April 27-30.

CHEMICAL GROUP OF NATIONAL ASSOCIATION OF PURCHASING MANAGERS, mid-winter conference, "Purchasing — Opportunity in a Changing World," Baton Rouge Hilton Hotel, Baton Rouge, La., February 18-20.

CHEMICAL MARKETING RESEARCH ASSOCIATION, Houston Meeting: "The US Chemical Industry Responding to Change," Westin Galleria Hotel, Houston, Tex., February 4-5, 1987.

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, 73rd mid-year meeting, Chicago Marriott Hotel, Chicago, Ill., April 28-29.

CHINA CHEM '87, international exhibition on chemical and petrochemical industries, China International Exhibition Center, Beijing, China, April 5-9.

CHLORINE INSTITUTE, winter meeting, Mayflower Hotel, Washington, D.C., March 15-19.

DRUG, CHEMICAL & ALLIED TRADES ASSOCIATION, 61st annual dinner, Waldorf-Astoria Hotel, New York, March 19. Spring luncheon, Sheraton Centre Hotel, New York, N.Y., June 11.

FERTILIZER INSTITUTE, 1987 annual meeting, Marriott Orlando World Center, Orlando, Fla., February 1-3.

FIRE RETARDANT CHEMICALS ASSOCIATION, international conference on flame retardancy and fire safety, Sheraton New Orleans Hotel, New Orleans, La., March 22-25.

INSTITUTE OF GAS TECHNOLOGY, 11th annual symposium on energy from biomass and wastes, Hotel Royal Plaza, Walt Disney World Village, Buena Vista, Fla., February 2-6.

INTERNATIONAL PRECIOUS METALS INSTITUTE, 11th international precious metals conference, Brussels, Belgium, June 14-18.

INTER-SOCIETY COLOR COUNCIL, scientific conference, Williamsburg Lodge, Williamsburg, Va., February 8-11.

NATIONAL PETROLEUM REFINERS ASSOCIATION, 85th annual meeting, Convention Center, San Antonio, Tex., March 29-31; 12th international petrochemi-

cal conference, Convention Center, San Antonio, Tex., April 5-7.

POLYURETHANE MANUFACTURERS ASSOCIATION, Spring meeting, commercial development of new castable systems, Fairmont Hotel, Dallas, Tex., April 28-29.

SOCIETY OF MANUFACTURING ENGINEERS, advanced ceramic '87 conference, Clarion Hotel, Cincinnati, Ohio, February 17-19.

SOCIETY OF PLASTICS ENGINEERS, South Texas section, fifth international conference on polyethylene, Wyndham Hotel-Greenspoint, Houston, Tex., February 23-25; SPE-ANTEC, Bonaventure Hotel, Los Angeles, Calif., May 3-7.

SOCIETY OF THE PLASTICS INDUSTRY, 42nd annual conference of the composites institute, Cincinnati Convention & Exhibition Center, Cincinnati, Ohio, February 2-6; vinyl formulators division, 8th annual technical meeting and conference, Dearth Hotel, Dallas, Tex., April 8-10.

THE FERTILIZER INSTITUTE, 1987 Annual Meeting, Marriott Orlando World Center, Orlando, Fla., February 1-3, 1987.

BUSINESS BRIEFS

ADVANCED MATERIALS as an emerging technology will be covered in a luncheon address by Dr. Harris Burle, the chief scientist of the Air Force Materials Laboratory at Dayton, Ohio, at the 15th annual process evaluation/research planning seminar scheduled for January 15-16 in New York. Dr. H. Spitz, Chem Systems chairman, will present the two-day seminar with a plenary talk on innovation and the chemical industry.

ULTRAFORM CORPORATION says its "Ultraform" acetal copolymer grades H 2320, N 2320 and 2320 have received official listing by the National Sanitation Foundation for use in potable water fittings and appurtenances. Ultraform acetal copolymer is manufactured by Ultraform GmbH, a joint venture of BASF and Degussa AG. The US subsidiaries are building an integrated production facility at Mobile, Ala., for startup in early 1988.

CREMILK PETROLEUM INC.'s Oil Field

Chemicals Division has developed a new family of acidizing solvents for acid and non-acid stimulation fluids. Trademarked "Vera-Solv" acidizing solvents, the products are described as complex blends available in a range of five formulations for use with different types of crude oil.

DOW CHEMICAL COMPANY is offering premium grade "Methocel" cellulose ethers for specialty applications in the Japanese pharmaceutical market. Japan is the world's third largest pharmaceutical market, representing a "significant business opportunity for Dow," the company says. Dow claims to be the world's largest supplier of methylcellulose and hydroxypropyl methylcellulose products.

DU PONT COMPANY says it has obtained exclusive marketing rights to an advanced system for monitoring anticoagulant ther-

apy from Biotrack Inc., Sunnyvale, Calif. Terms have not been disclosed. Du Pont says Biotrack's Protine Test System is the first immediate, accurate test for critical dosage management of the anticoagulant, warfarin. Du Pont's "Coumadin" is said to be the largest selling warfarin product, and is used widely to manage blood clots in patients.

DYNAMIT NOBEL CHEMICALS has introduced a new line of metal alkoxides in clear, stable solution form. The products are used to produce fine particle metal oxides via low energy sol-gel technology for the modification and property enhancement of catalysts, glasses, ceramics and advanced coatings.

H-R INTERNATIONAL, an Edison, N.J., engineering and construction firm serving the energy, chemical and related industries, has opened two new offices in Texas, at 4828 Loop Central Drive, Houston, and at 400 East Anderson Lane in Austin. The offices will be involved in contract maintenance for Texaco

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BUSINESS BRIEFS

Chemical's Austin Research facility, construction services for US Industrial Chemical's polyethylene plant in Latexo, and engineering and construction of Denka Chemical's maleic anhydride plant expansion at Houston.

THERMOFIL INC. has introduced new, highly chemically coupled glass-reinforced polypropylene products available in 10 through 40 percent glass reinforcement levels. ThermoFil says chemically coupled glass-reinforced polypropylene has the lowest cost per cubic inch of any engineering resin.

UNION CARBIDE Corporation says its Taft, La., plant set a company safety record, when more than 1,100 employees worked more than 10 million hours without a lost workday case. Carbide says the plant has received several awards over the past year in recognition of its safety performance.

CHEMICAL MARKETING REPORTER